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Gold-Mining in North Carolina.

By George B. Hanna, U. S. Mint, Charlotte, N. C.

IV.

THE GOLD GRAVELS AND ACCOMPANYING VEINS OF THE PIEDMONT AND MOUNTAIN REGIONS.

The gold gravels in North Carolina have a distribution as wide as the crystalline rocks. The deposits in Montgomery and Franklin counties have already been described, but those of the mountain section are deserving of separate notice. The source of the gold of these gravels is to be found in the numerous quartz veins which penetrate the altered crystalline schists in innumerable number, and which, through the weathering process, have been concentrated in basins and channels and beds of streams. The South mountain area is comprised in the space of some 200 square miles in the coterminous parts of Burke, McDowell and Rutherford counties.

In the accompanying figure "the relation of the placers to the topography and of both to the governing geological conditions are exhibited. This diagram represents an ideal section southeast and northwest, transversely to the strike, across two of the richest and most noted gold valleys, separated by the Pilot, already familiar to us. These are the valleys of Silver creek and Muddy creek, known as Brindletown and Brackettown. The Pilot and the ridge of the South mountains (the left in the section) owe their existence to the hard and heavier-bedded gneisses of which they are composed, while the valleys have been scooped out of the softer and thin-bedded mica schists and hydromicaceous rocks, which are also more abundantly veined."

"In some cases over considerable spaces the deposit has been entirely removed by denudation, leaving only the floor covered with a layer of quartz pebbles and angular fragments and the gold in the present soil within reach of the plowshare. Many of the richest gold washings of this State have been of this description, and farms, gardens, yards and the sites of houses have been sluiced away and thousands of dollars per acre obtained from soils that had been cultivated for generations in ignorance of their mineral riches. Large tracts of this character hundreds of acres in extent are found in the locality already so often cited, the foot-slopes in the Pilot.

"The accompanying diagram (ideal as to its lower portion and contracted longitudinally) also exhibits the character and origin of the gold deposits in the creek bottoms of the region, which were extremely rich when first wrought thirty-five to forty years ago, yielding \$10.00 a day to the hand with the rudest apparatus and most unskillful labor. The gold of these creek gravels, as shown in the figure, was derived from the placers swept down from the adjacent slopes."

The mining in this section has been very extensive for seventy-five years, but is now languishing. The operations of the past were necessarily confined to such deposits as lay near water, and when these were exhausted work was in a great measure abandoned. The work of the future will be on the deep-lying gravels, which require

expensive treatment with powerful hydraulic means, and on the treatment of the numerous veins which course through the strata. Individual veins will rarely allow of profitable treatment, but collectively will frequently justify work by hydraulics.

The surface of the country is very rolling and water is commonly abundant, hence the "Georgia" method is generally easily

county are the Vein Mountain, Hunt's Mountain and the Granville. The first and second are owned and operated by one company. The tract comprises 6800 acres. Vein Mountain is well supplied with water, and extensive work has been done in the rich gulches, some six or eight in number, and on the veins, of which twenty or more have been uncovered. The following line of



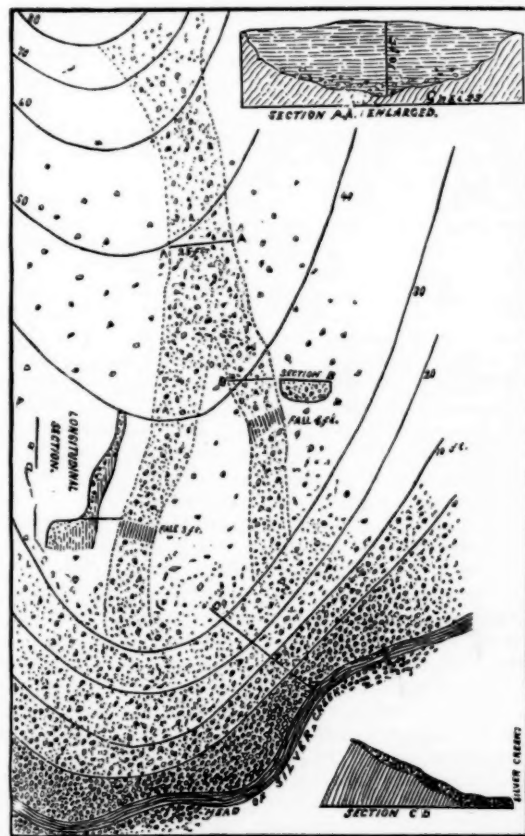
SECTION ACROSS PILOT AND SOUTH MOUNTAINS SHOWING GOLD GRAVELS IN THE VALLEYS.

applicable, namely, a tearing down of the deposits by a stream of water under great pressure, of sluicing and of a stamp treatment of the quartz. The concentration of the tailings has not hitherto been found profitable, but the trend of work is evidently in that direction, and the benefits to be derived from a solution of this problem are promising enough to invite to experiment.

assays indicate the character of these ores: \$2.58, \$4.13, \$6.21, \$10.33, \$13.57, \$74.48 per ton. The Granville mine contains 1600 acres.

The production of this mountain area is estimated to have been at least \$2,000,000 to \$3,000,000.

The Polk county deposits, some twenty-five miles southwest, appear to be an extension of the South mountain area, and,



GOLD-BEARING GRAVEL BEDS, EASTERN BASE OF PILOT MOUNTAIN, BURKE COUNTY.

The following localities may be enumerated: The Golden Valley, Lawson-Smart, Grayson and Gamble in Rutherford county; in Burke county the Hancock, Gren Alpine, Carolina Queen and J. C. Mills. The latter has long been worked and has abundant resources for much larger operations.

The more important mines in McDowell

while the deposits are valuable, the section is to a great extent lacking in those natural advantages which in the South mountains constitute so prominent a feature of the work. The best known localities are the Patty Abrams, Wetherbee, Red Springs, Tom Arms, Splawn, Ponder, Riding, L. A. Mills, Carpenter, Hamilton, Neal, MacIntire, Double Branch and

Prince. The Splawn has a massive vein of low-grade quartz.

Vein mining in Rutherford is confined to the Wallace and Idler, four miles northeast of Rutherfordton, and to the Elwood and Nonanta near by. The ores are sulphurets of fair grade.

No mining is carried on in either Wilkes or Watauga, though limited areas of gold gravel are found in both counties.

In Henderson county at Boylston creek gold has been for a long time obtained, but more recent explorations have disclosed an enormous deposit of gold-bearing quartz and schists which extend in a northeast and southwest direction for a distance of more than two miles, and probably accompanied by parallel bodies of ore. This ore contains a small per cent. of sulphurets and is of relatively low grade, but exceedingly abundant. Stamp milling, concentration and chlorination are entirely applicable to these bodies of ore.

There are two other gold regions—one in Cherokee, the other in Jackson—where gold deposits occur of sufficient richness to warrant consideration.

The gold of Jackson is obtained almost entirely from placers situated along the southern slopes of the Blue Ridge, near Hogback and Chimney Top mountains. The most important locality is Fairfield valley, along which these deposits extend for several miles, and are by no means yet exhausted. The origin of the gold is doubtless to be sought in veins in the Blue Ridge to the north and east, along the base of which Georgetown creek has cut a deep channel.

The deposits of Transylvania east of the Blue Ridge, on the headwaters of the French Broad, are supposed to be a continuation of this same belt and to have a similar origin.

In Cherokee county the gold belt is in the same body of soft slates and schist which carries the limestone and iron and is found both in placers and in veins. The sands of Valley river yield profitably through a large part of its course and along some of its tributaries. Southeast of the limestone is also a series of "diggings" along the lower slopes of the mountains from near Valleytown to Vengeance creek, a distance of twelve to fifteen miles. Other minor belts are also known in this section.

This western section of North Carolina is really the extension of the well-known Georgia belts, which have been so extensively and skillfully operated for seventy years and are of substantially the same character. There is in this section the same abundance of water, the same rolling character of the surface which so easily allows both the introduction of water and the removal of tailings. This region is now inferior in resources. Nevertheless it has received little attention, and no systematic development has been carried on.

SUGGESTIONS AS TO MODES OF TREATMENT AND BUSINESS CONSIDERATIONS.

It may be allowable to offer a few simple suggestions as to leading lines in the best mode of developing the precious-metal industries. A relatively small proportion of ores as taken from the ground will bear either transportation or metallurgical treatment; but must undergo preliminary con-

* W. C. Kerr, Am. Jour. Sci., third series, XXI, 355.

† Ibid, XXI, 357.

centration at the mine, and will come in one or other of three general classes:

a. True milling ores—that is, gold and silver ores, *per se*.

b. Gold and silver-bearing copper ores.

c. Gold and silver-bearing galenites.

There will be four modes of treatment applicable to these materials:

A. The stamp mill treatment with concentration.

B. The chlorination method. These two modes of treatment (A and B) are almost inseparable.

C. The copper matte or copper bottom smelting method.

D. The lead smelting method.

Details are omitted from this statement, since they are largely technical and are well understood by those conversant with the art of metallurgy. The so-called "processes" are purposely left out, as, in spite of some partial successes, they are not likely to do much toward the solution of the problem.

The present resources of the smelter and of the chemist are nearly adequate to a successful treatment of any material which may be produced or submitted, and the question now is chiefly as to the successful business application of those principles; in a word, the question is as much one of business as of science, though there is room for the introduction of better and cheaper methods. The perfecting and the cheapening of the known methods and a better combination of them are now the important points to be aimed at.

If these resources shall be developed as it is believed their extent would warrant, a few large plants at important points will be the conspicuous feature, though, it should be added, there must generally be a careful preliminary treatment at the mine, to which these metallurgical establishments shall be a supplement.

The mining and metallurgical business must be largely dissociated. Whatever plants are established must be capable of treating everything of the above classes brought to them, for in the combination of materials frequently lies the feasibility and the economy of the treatment.

Whatever points can best command railroad facilities, the best markets, the cheapest supplies, will to a great extent monopolize the business.

Heretofore no use has been made of the sulphur of these ores, but as sulphur is now becoming an important material in manufacturing the fertilizers demanded in constantly increasing quantities by the ever-growing agricultural development of the section, it is evident at a glance that the possibilities in this direction are very large. A smelting establishment treating ten tons of sulphurets per day (an amount which is by no means large) and making no effort to save the sulphur, throws into the atmosphere \$30,000 of sulphur each year.

There are no bonanzas in this State, but many places where well-planned and well-conducted enterprises, not over-capitalized, ought to have a fair reward and steady dividends.

THE areal survey of the site of the Algiers dry-dock at New Orleans has been completed, but the survey of the actual ground to be covered by the dock proper and that portion where the water is to come will not be finished until about the 12th inst. Four of the borings have been made in the land, and the soil, while sandy nearly all the way down, is satisfactory to the commissioners. Messrs. W. L. Hodgson & Son, the well-known real-estate firm of New Orleans, visited the premises as experts for the purpose of placing a proper valuation upon the land required by the government and to ascertain at what price the land can be bought. They were appointed by Capt. Thos. V. Selfridge, chairman of the dock commission, on the recommendation of the Secretary of the Navy.

Resources and Advantages of Alabama

By W. E. Horne.

The man to whom contentment comes in this land of ever-recurring spring, and who has no restless desire for change, is one who has lived in more northern latitudes, who has traveled from east to west, from zone to zone and sea to sea, been bitten by the frosts of the Sierras and blinded by the flying sands and drifting snows of winter on the treeless plains.

Alabama lies between thirty and thirty-five degrees of latitude north of the equator. From its shore line of warm gulf waters on the south its undulating reaches rise step by step, forest crowned, to the Appalachian chain of mountains on the north. With a great heart of iron pulsing and throbbing, with limitless energies of coal, robed in the whitest fabrics of the loom, rich in cereals, grasses, fruits and vines, Alabama offers a restful home of thrift and joy to the artisan and plowman—the bread-winners of the age. In the south the warm waters of the Gulf Stream ripple about her feet and the magnolia blooms.

Here berries glint with ruby sheen
In necklace worn by sward and mold,
And all year round from boughs of green
The orange hangs in globes of gold.

In the north the limpid waters of the Tennessee, like a band of silver, encircles her brow, while the naiads of her mountain streams bind wreaths of laurel and spruce, the chestnut and oak. Here Ceres holds her court of plenty and gathers her ripening grain.

In the west from valleys as rich as the Indus or Nile toiling hands are gathering, spinning and weaving the white, fleecy and fibrous cotton.

In the east she holds in her hand a coronet of gold dug from her mines, enriched by gems brilliant with the light of a genial sun.

Located between the extremes of heat and cold, with highland and lowland and a soil rich in plant-producing humus, in 1870 Alabama was the third cotton-producing State of the South. Favored, more favored than any of her sister States, in 1860 she was the seventh in the aggregate production of agricultural values in America. In this year a tabulated statement of her crops showed:

Cotton.....	Over a million bales
Wheat, in bushels.....	1,215,444
Rye, in bushels.....	72,457
Indian corn, in bushels.....	33,226,282
Oats, in bushels.....	682,179
Peas and beans, in bushels.....	1,482,036
Potatoes, in bushels.....	5,931,563

Buckwheat, barley, sugar, molasses, wool, honey, butter and hay in proportion, and the value of animals slaughtered \$10,237,131. Ten years after the blight of war and the radical change in the labor system, the total value of farm products, with a slightly increased population, showed a shrinkage of over one-half of what it was in 1860.

Gradually as she drifted away from this era of impoverishment with each decade, the census showed rapid advance under the new regime to a higher plane of more diversified labor, more freedom in toil, sweeter homes, better schools and greater wealth. In an article published in 1878 Mr. Milner (than whom there is no better authority) says: "Alabama is a good country all over and everywhere. I have lived in and been over all the old States of our Union west of New York, and have lived and traveled over all the vast States and Territories west of the Mississippi river to the Pacific ocean, except Arizona, Montana, New Mexico and Dakota, and I find nowhere in my travels any 50,000 square miles of territory surpassing or even equaling Alabama in soil or climate, in minerals, in productions and in all the natural elements for producing comfort and wealth."

The Tennessee river, passing Chattanooga, enters Alabama in a winding course, and, after traversing the northern portion

of the State, its course is deflected northward into the Ohio river. A magnificent ridge on the east of the river has two divisions, one above the other. The eastern is called Lookout mountain, and the western, Sand or Raccoon mountain. These two ranges or ridges form the northern boundary of the great coal field of Alabama, which makes the Silurian valley with its great basins of coal; the Warrior on the west, which has an area of 5000 square miles; the Cahaba, 400 square miles, and the Coosa of equal dimensions, drained by the several rivers of similar names. Between these two elevated plateaus or ridges is the valley of Wills creek, which affords the only easy access from the northeast to the Silurian formation, which is the great repository of the iron ores of Alabama, and through which the Alabama Great Southern Railroad takes its course. The top of the Lookout mountain range for seventy miles in Alabama is tableland some nine miles wide and has an altitude of from 1500 to 2000 feet, with an inviting soil, well timbered and watered.

For fruits, grains, grasses, vines and diversified crops generally these lands, together with those like them on Sand mountain, for the thrifty and intelligent farmers, are the most valuable in the South. The thermometer is never below zero in winter nor above 90° in summer. The rainfall is abundant and the drainage perfect. Here the sunstroke of summer and the blizzard of winter are unknown. On these slopes green grasses grow the year round; in fact, the whole mountain in winter is pasturage ground for stock. Here every dollar's worth of human energy expended finds a market of profit in gold. The crops gathered are not fed out to stock through long, cold winters, as in less favored localities elsewhere.

In these healthful atmospheres (a pleasant summer resort for the invalid) nature restores rapidly wasted energies. In the future, with its Franco-Italian climate and soil, it will be the orchard, garden, vine-land and sanitarium of the South.

In coal and iron we have two minerals in which nature has conserved her power and strength, and they are known to the markets of the world. Here some day will be the seat of empire.

Birmingham, once a cotton plantation, almost within a decade of years has a sky reddened with furnace fires, a population in city and suburbs of 50,000 and a property value of over \$50,000,000, with a daily output of over 15,000 tons of coal, 2000 to 3000 tons of coke and over 5000 tons of iron. Of these iron ores Professor McCally says: "This famous ore is especially well developed near Birmingham, is of superior quality and yields an excellent grade of iron. This deposit of iron ore is not only the largest in the State, but is regarded one of the wonders of the world."

Col. A. K. McClure, of the Philadelphia Times, said in 1885: "It is the most inviting iron field on the continent, with a coal trade in the near future that will be bounded by the coal ports of the world."

Hon. W. D. Kelley, the venerable Congressman from Pennsylvania, in an article in the MANUFACTURERS' RECORD, said: "A very large part of the South is blessed with a climate unexcelled, if equalled, elsewhere in the world. As to the mountain region of the South, it is richer in natural wealth and in advantages for the development of that wealth; it has a finer climate, better water and higher conditions of health than any region of which I have any knowledge, and is withal one of the most beautiful regions in the world; and nowhere, other things being equal, can iron be made cheaper than here."

Whenever, in the evolution of man, a discovery was essential to his advance, it followed as surely as does the night follow the day. In ten seconds electricity gives us the white heat of welding iron and a

new forge. Why not a new furnace? With it the dull iron becomes the bright steel. Where else in America have we the same volume of conserved forces to be set free? When this is done, as done it will be, the favored State will measure and meet the demands of a more forceful age and a higher civilization.

The recent treatment of sulphurets by electricity may and will, in the opinion of Mr. Edison, of America, and Mr. Hannay, of England, make the vast volumes of sulphuret gold ores of Alabama another source of profit. These ores, which had been oxidized by the sun of ages, yielded several millions of gold before the discovery of the richer fields in California. Some of them can be worked to a profit now, and, with the cheaper and more improved machinery of the day, most of the old abandoned mines will be worked and new finds made.

Mg. Smith, a leading manufacturer of Trenton, N. J., said some years ago before the tariff committee of the House of Representatives at Washington that "the reason why the higher grades of porcelain and chinawares were not made in the United States was because no pure kaolin had been found in place in this country." It is here in Wills valley, in Alabama, in quantity and in situ. It took the premium in 1876 over all foreign kaolins—over that of China, Germany, France and England. A time will come, and that at an early day, when Alabama will have an art school of design, a community where ceramic art will be taught, and America, like England, pride herself upon a Kensington in the South. She can drive out of the market with her classic and translucent tableware the dull and heavy grades now made from clay.

The negro and cotton long were intimate allies for the impoverishment of both mind and soil. When war had been supplanted by peace the negro was left free to enjoy the atmosphere of freedom and had the ballot conferred upon him, which in all the ages past had been a great incentive to order, culture and diversified labor. The transition from slavery to freedom and the ballot did not educate at once, but intoxicated to delirium and waste. With him as a factor after the war was over it was difficult to reconstruct the civic forms of government in the South, reorganize labor and re-establish agricultural, commercial and political relations with the other sections of a restored Union. There was a want of homogeneity in the two forces under the new regime, in which both whites and blacks had to learn and unlearn, and a conflict was the result. Intelligence had to battle with ignorance.

Man fears the lion's kingly tread.

The tiger's fangs of terror;

But man himself is most to dread

When mad with social error.

No torch, tho' lit from heaven, illumines the blind;

Why place it in his hand?

It lights not him, but it consumes

The city and the land.

But this era of illiteracy, prejudice, fear and hate is a thing of the past, and the negro and cotton are divorced. Neither dominates, and the white man finds by intensified farming in the cultivation of cotton a rich reward for his labor. There never was, in fact, an irreconcilable conflict between the whites and blacks in the field of labor, and at this time there are no diverging lines.

Out of these Southern areas of hidden wealth a skilled and diversified system of labor will erect a more regal throne than King Cotton ever knew.

Birmingham, Ala.

D. McNAMARA, an oil-well expert of Franklin, Pa., has been examining the geological formation of Alabama, and gives the opinion that oil and gas exist in the mineral regions of the State. He believes that if borings are made to a depth of 1500 or 2000 feet they will be found in large quantities.

What Georgia Offers Northern Farmers.

By Will F. Wynne.

During the coldest of winter months, while the people of the frozen North are busy making fires to keep themselves warm and their stock from dying on account of the intense cold, I am sure they never give the advantages offered by the South one thought, for, if they did, things would be entirely different. Just think about the disadvantages of the Northern farmer as compared with farmers in Georgia. At the North they can only work on their farms and have something growing seven months in a year unless they go to the enormous expense of providing artificial heat, while at the South they can work the whole twelve months in a year and have a profitable crop growing all the time—something that will bring them the money on the markets. They do not have to devote but a small part of their time to preparing to keep warm and care for their stock. A short while around the fire in the morning and evening is all the "warming" necessary for any healthy person to keep comfortable. And as for the stock—horses, cows, hogs, chickens, etc.—not one farmer in a hundred prepares anything more costly for their comfort than a well-covered, ventilated shed—many have no covering at all—and animals are never known to die in Georgia from exposure, especially in the southern part of the State, which is the garden spot of the Western Continent.

Thinking of this calls to mind the difference of what it costs a farmer to buy a small farm here, put up all necessary out-buildings, etc., in comparison to what it will cost him in the North. Here 100 acres is considered a very small farm; but I know a few instances where families of six, eight and ten live well on this area of land and make something each year to put aside for "hard times." This fact tells at once why the farmers of the South stood the late financial stringency so much better than those of the North. Money was not necessary to buy clothes, and as for food they can grow some provision crop each month in a year which enables them to keep the "wolf from the door," money or no money.

Now as to the comparative cost of farms. In the North the average farm is from twenty to fifty acres, which cost anywhere from \$40.00 to \$80.00 an acre, making a small farm cost from \$800 to \$1600 minimum without any buildings; add the buildings necessary and they will cost at the lowest \$2000, making a small farm with buildings cost \$2800 to \$3600, with no extravagance whatever. To this outlay must be added the cost of stock and utensils to run the farm properly. Here in Georgia a farmer can purchase 100 acres of good arable land near the railroad at from \$250 to \$500. He can erect a four-room house, with cellar and garret, for from \$500 to \$800; necessary outbuildings for \$200 more, thus giving him a 100-acre farm with all necessary buildings at from \$950 to \$1500. On this farm he can grow a range of money-bringing crops too numerous to mention. Lands at this price are situated along the various railroads in Georgia, especially the East Tennessee, Virginia & Georgia Railroad, where the timber has been recently sawed into lumber, and there are not people enough to develop these lands, which are as productive as any in Georgia, and will produce most any kind of crop grown on Georgia soil as well as the acclimated fruits, melons and the like.

This difference in the cost of preparing a comfortable home, to say nothing of the superior climate, will in the near future be a factor in attracting many settlers from the chilly and crowded North to Georgia. People who look ahead are sure to investigate these facts, and before the readers of the MANUFACTURERS' RECORD realize it,

the South, Georgia in particular, will have a very large number of Northern farmers and fruit-growers within her bounds in addition to those now here. To the consummation of this the railroads doing business in the State should lend some aid in the matter of securing settlers along their lines. The railroads could well afford to employ a good man familiar with the resources at a good salary and keep him in the North working up excursions of prospectors to come down and investigate the possibilities of Georgia or any other Southern State, for that matter, and make money at the venture, even if no sales of land were made to the prospectors.

When Major W. L. Glessner was employed in this vocation by the Central Railroad of Georgia he not only paid his salary and expenses, but from his efforts a snug sum was turned into the road's treasury each month. As commissioner of immigration for the Georgia Southern & Florida Railroad now he is doing the same thing, while he has also induced many settlers to locate along its line who will in time add considerable to the road's revenues in freight and passenger traffic.

I have received many suggestions on this point. Some of them if acted upon would produce an astonishing influx of prospectors to Georgia, in my opinion, within three months' time. Here is one addressed to me personally on October 28 which I think a most substantial suggestion. It is as follows:

"Dear Sir—The principal question of interest to railroad managers at present is the enlargement of their traffic by all legitimate means in their power, and their chief mode of procedure seems to be the development of the lands on their line of roads where they are susceptible of development when proper inducements can be obtained from the owners and a feeling of enterprise can be inculcated in the community contiguous to such localities as are selected. Anything that will aid in the work or any suggestion of practical value should be readily adopted and promptly acted upon by the management where it promises to facilitate the development of lands or engender an interest in hitherto lukewarm adherents to the policy of the developers. When a locality is selected for development and it is decided by the promoters of the same to push it to a successful end, then such suggestions are in order and are looked for, eagerly seized upon and practically applied when found.

"The principal object of railroad officials is the ultimate benefits to be derived by the railroad from freight and passenger traffic not only during the process of development, but mainly in the future value to the road accruing from actual settlement of communities, manufactories and other collateral industries on the line of road. Practical illustrations of the power of advertisements are numerous and their value unquestioned. Judicious correspondents for leading papers, truthful circulars and catchy illustrations in pictorial papers and magazines all add to the main idea. One of the most valuable adjuncts is the placing of the country immediately to be developed before the public by means of landscape pictures handsomely gotten up from nature, truthfully and accurately portraying the land as it is; print them in four or five colors—not by photographs, which do not do justice to the view, but by landscape artist, whose ability will admit of laying off lots, streets, towns, etc., growing orchards and such improvements as may be intended to be placed upon the land—and generally embellish the picture so as to make it pleasing to the eye, while it still retains all of its original individuality and can be readily recognized when seen.

"I have seen this plan of landscape advertising very successfully operated several times, and it occurred to me that with the many beautiful views along the lines of

railroads in Georgia where large and desirable tracts of land may be secured for development and the hearty co-operation of an enthusiastic and enterprising community would be promptly and cheerfully accorded the movement, a great success could be made of it.

"The endorsement of a railroad in itself would be a great factor in opening up large fruit and melon farms, and a picture from nature to exhibit to buyers and prospectors would be a most excellent advertising medium at a comparatively small cost. Should you deem it of sufficient interest to investigate the practicability of this suggestion I would be glad to enlarge upon its merits personally or by letter.

"Yours respectfully,

"S. E. AUSTIN."

Through the efforts of Maj. W. L. Glessner the employees of the Georgia Southern & Florida Railroad have organized a co-operative orchard company and will commence improvements at once. This will tend to induce more settlers to locate along this line of road, and will prove a good-paying investment for the employees. Other roads in Georgia, especially the East Tennessee, Virginia & Georgia Railroad, the S. F. & W. Railroad, the Central and Richmond & Danville systems would do well to emulate this example and employ a man to make the resources along their respective lines a household word among the farmers of the North. In my opinion they will have to do this, or else see the earning capacities of their roads become less and less each year. If the lands along their lines are not developed, how can they expect to secure traffic sufficient to pay operating expenses? Certainly railroad managers have never given this subject a thought, for if they have they are showing poor judgment in not doing something to enhance the value of their roads and increase their earning power.

I repeat again and warn Northern farmers who anticipate coming South not to pay \$18.00 to \$30.00 an acre for lands when they can buy just as good lands at from \$5.00 to \$10.00 an acre, with the same facilities as the higher-priced lands. The inquiry for Georgia lands at this time is very large, and I write this to keep anyone from paying more for lands than they will bring on the markets from home buyers, the sellers usually being satisfied with 20 per cent. more than their lands will bring at forced sale, which is their full value.

Fort Valley, Ga.

New Orleans Attracts Capital.

W. P. Curtis, of New Orleans, an extensive real-estate dealer, has just returned from Chicago, where he was one of the delegates to the World's Real Estate Congress. Mr. Curtis has been giving an idea of the way the South is at present regarded by Western capitalists to the local papers. In an interview he said:

"In my conversation with real-estate men and with the capitalists of Chicago I found that the profitable character of investments in the South, and particularly in Louisiana lands and in manufacturing industries in this city, is attracting the attention of capitalists to a greater degree than investments in any other section of the country at this time, and I also found there a number of local capitalists who had either already been here or intended coming here during the winter to look into the advantages offered by our city.

"I found also many Northwestern capitalists inquiring about Louisiana cypress and pine lands. The immense amount of capital that has recently come to this State from that section and found investment in lands is most significant, and that this will soon make New Orleans the great lumber exporting city of the country there can be no doubt.

"By the way, I want to say that it is a

fact that but few people seem to have found out, that New Orleans shows a larger proportionate increase in industries and in the laborers employed in manufactories of any of the principal cities in the United States, according to the figures of the official census reports now being made public. This is a matter of great importance, and a great many of the real-estate men whom I met in the West voluntarily mentioned the fact to me on my visit. It is a matter that ought to impress itself forcibly upon the minds of our own moneyed people. While this statement may startle some people who have not taken the trouble to investigate it, it is only necessary to look about and see the immense amount of capital invested here in the last ten years, notably in breweries and sugar refineries, for which millions of dollars have been expended, as well as in manufacturing industries of every line, many of which were totally unrepresented here only a few years back."

The statements above are borne out by the fact that within the last fortnight A. W. Newton, representing the First National Bank of Chicago, has been in New Orleans on a special mission. The people whom he represents have great faith in the growth and development of this State, and of the stability of its prosperity and its advancement. He has accordingly been given authority to look up a suitable location for a bank in one of the thriving towns in the country parishes. He will first make a personal inspection of several towns along the Southern Pacific Railroad and the Illinois Central Railroad, after which he will submit a report to the gentlemen interested in the venture, with recommendations upon such places as strike him most favorably. As the principals of the new bank are men of large means, the capital with which it will go into business will be ample for all transactions which it may have to effect.

Incorporations in South Carolina.

The report of the secretary of state of South Carolina gives a condensed statement of the number of charters and certificates issued during the year ending October 31 as follows: Seventy-two certificates of charters have been issued and fifty-five commissions of incorporations, to which returns have not as yet been made, which are classified as follows: Eight building and loan associations, one fibre company, two phosphate companies, one fur company, twenty-two mercantile companies, three social clubs, one shingle company, fourteen manufacturing companies, one boat company, four lumber companies, two hedge-fence companies, three telephone companies, one water company, five banking companies, nine real-estate companies, twelve cotton mills, one wheelmen's track association, one business college, two insurance companies, four oil companies, one park association, one engraving company, one distillers' association, one joint stock company, two hotel companies, one castle hall company, three canning companies, two educational companies, one hospital company, two stevedoring companies, one camp-ground association, one breeding and trotting association, two coal companies, three machine companies, one brick and tile company, one incubating company, eight publishing companies. Seventeen companies have reported an increase in capital stock.

Savannah's Commercial Club.

The committee which is securing members for the commercial club to be organized in Savannah announces that it has secured over 100 names already and that the organization is assured. The project has already advanced so far that a committee is preparing a constitution and by-laws and another committee is looking for quarters for the club. The leading business men of the city are interested.

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on page 261.]

The Latest L. & N. Combination.

The sale of the Chesapeake, Ohio & Southwestern to the Louisville & Nashville and Illinois Central has aroused much speculation as to the future of the first-named line. Apparently it is to be divided among the two systems, each taking the section which will be of most benefit to it. C. P. Huntington, the former owner, states that negotiations were begun for its purchase a year ago, but no conclusion was reached until a few days ago. The line gives the Illinois Central entrance to St. Louis by way of Memphis, Tenn. The present line of the Central is nearly 100 miles east of the latter city. The Chesapeake, Ohio & Southwestern will put the Louisville & Nashville in possession of all the territory in Kentucky between Lexington and the Tennessee river, and it will bring one more road into the Louisville & Nashville station in Louisville. It will also provide the Louisville & Nashville with terminals in Memphis which would have cost to duplicate something like \$500,000 or \$600,000.

The road is about 400 miles long, running from Memphis to Louisville. For the year ending June 30, 1892, its net earnings were \$823,159.36, about 36 per cent. of the total. With revenue from ground and track rents and other sources this sum was increased to \$868,684.34.

By the terms of payment Mr. Huntington will turn over to the purchasers a majority of the common and preferred stock and the other securities, with the exception of the first mortgage bonds, his large holdings of which he will retain. He will receive, it is understood, 10-year notes, made by the Louisville & Nashville and endorsed by the Illinois Central. The real ownership will therefore rest with the Louisville & Nashville, but the Illinois Central will have all the benefits to be derived from an equal use of the Huntington line. The additional capital stock which the Louisville & Nashville has decided to issue, it will be noticed, has not been used in payment, and the question arises what it will be used for. The coming meeting of the company will doubtless settle this point.

Foreign View of American Roads.

Herr Wollner, an engineer who has been commissioned by the Prussian government to make an inspection of the railways of this country with the view of adopting American improvements on Prussian roads, has arrived in New Orleans from a tour which included the Pacific slope and Texas. Speaking of the Southern Pacific he says:

"The Southern Pacific is a great road and I am well pleased with the way it is managed. I traveled from Portland, Ore., to this city over its line, and was struck along the route with the manner in which not only freight, but passenger traffic, is handled. The cars on the American railroads are unequalled by those in the old country, and we have nothing in Germany, and there is nothing in England, to compare with them in comfort and convenience. But the stretches of road here are so long that it would be almost unbearable to the passengers to travel so far without the luxuries of travel which the enterprising American roads afford. Like your hotels, I find the railroad in this country an institution of purely American stamp, bearing on the surface suggestions of the enterprise and ability of the American people to take hold of great schemes of construction and to put them successfully through to perfection. Miles and mountains seem to be matters of little consideration when the

Americans set their heads together to build a great system of railroads."

From Iowa to the Gulf.

Another important move which shows how Northwestern railroad traffic is gradually being diverted to New Orleans from points farther north and east is the establishment of a through sleeping-car service by the Illinois Central between Sioux City, Iowa, and New Orleans. A car will leave New Orleans at 11.30 A. M., arriving at Chicago at 4.30 P. M. next day; leave Chicago at 5 P. M., and arrive at Sioux City at 10 A. M. next day, less than forty-eight hours between New Orleans and Sioux City, a distance of 1425 miles. This train passes through the States of Louisiana, Mississippi, Tennessee, Kentucky, Illinois and Iowa, extending from the extreme limits of southern Louisiana to western Iowa and junction with Nebraska and Dakota. Passengers for Florida can take another sleeper at New Orleans and go to any of the principal Florida cities without change. This improvement in railway travel from the Northwest will probably increase the business of the Illinois Central this winter to a large extent. It is only another illustration of the foresight and enterprise which has made this great system what it is today—one of the finest in the country.

Into Receivers' Hands.

The Tennessee Midland and the Paducah, Tennessee & Alabama are two more roads to go into the hands of receivers. John Overton, of Memphis, and William L. Huse, of St. Louis, have been appointed receivers of the former, also the latter road. The Tennessee Midland was chartered in 1886, and 136 miles have been built from Memphis to Perryville, Tenn. For nearly 100 miles it parallels the Louisville & Nashville, which has obtained most of the business in that territory. According to statements issued the road in some years has not earned 20 per cent. of the interest on its bonded debt after paying operating expenses. In 1892 the road was sold to the Paducah, Tennessee & Alabama. By this arrangement the two lines obtained a Nashville connection and an outlet on the Ohio river at Paducah. The Paducah, Tennessee & Alabama extends from Paducah, Ky., to Lexington, Tenn., 117 miles. It is a consolidation of the Paducah & Tennessee Railroad and railway companies chartered respectively in 1854 and in 1888.

The C. & O.'s Splendid Record.

The record made by the Chesapeake & Ohio Railroad during the past year may justly be termed remarkable. In a period when disasters by land and by sea have been of almost daily experience, the Chesapeake & Ohio has carried its greatly-increased traffic without injury to a single passenger. Its immense business growing out of the World's Fair was handled not only with entire safety to its patrons, but with fidelity to the train schedule that was thoroughly satisfactory. This safe handling of business was due in a measure to the block system in force on the road, which has for several years successfully obviated loss of life or injury to passengers, making a trip over the line not only a delight to the eye, but freeing it of all apprehension of danger.—Washington Post.

The Mobile & Ohio's New Feeder.

Further details regarding the Montgomery, Tuscaloosa & St. Louis are to the effect that work is to begin on it in a few weeks. Contractor Woolfolk expects to begin at Columbus, Miss., where the line connects with the Mobile & Ohio, and build toward Tuscaloosa. As fast as each mile is completed it is to be turned over to the company for operation. The con-

tract calls for the completion of the road between Columbus & Tuscaloosa by September 1, 1894. The entire system is to be finished within two years from date of contract.

Another Texas Line.

The Missouri, Kansas & Texas is about to enter San Antonio, and has settled all doubt on the subject by preparing to construct a line from San Marcos to San Antonio. The distance to be covered is about thirty-five miles. The new road is to leave the M., K. & T. a short distance outside of San Marcos. From this point the surveyors are to follow a direct line to San Antonio. When opened the San Antonio branch will be one of the most important of the Missouri, Kansas & Texas system. A corps of engineers has begun making surveys.

M., K. & T. Case Postponed.

The legal fight between the Missouri, Kansas & Texas and the International & Great Northern Company, caused by the former's partial control of the Galveston, Houston & Henderson, has been temporarily settled by a decision of Judge McCormick, which removes the case from the State District Court to the United States Circuit Court. This does not meet until April, 1894. Meanwhile, the present arrangement by which the Missouri, Kansas & Texas will enter Galveston remains undisturbed.

Important Street Railway Deal.

The New Orleans Traction Co., of which H. M. Littell is president, has closed a deal by which it obtains control of the franchise and property of the City & Lake Railroad, one of the largest street railway systems in the world. The Traction Company made a proposition to the other company, which was accepted by a unanimous vote. This proposition in brief was that the Traction Company, in consideration of \$3,000,000 worth of 5 per cent. first mortgage gold bonds and \$500,000 worth of capital stock issued as full paid and not liable to assessment, would pay for and deliver to the railroad company a fifty-years extension of its franchise, retire its present bonded indebtedness of \$423,000, and entirely rebuild its tracks and equip the road for service with the trolley system of electric locomotion, doing from time to time all such work as may be required of the road by city ordinances, and keeping the road fully equipped. The Traction Company guarantees annual dividends of 8 per cent. after January 1 next. The stock and present property of the road, such as should be rendered useless by the change from mule-power to electricity, was to be held as a sinking fund for the retirement of the \$423,000 outstanding bonded indebtedness of the road. The City & Lake Company controls sixty miles of main line, comprising the Camp & Prytania Canal & West End, Esplanade Avenue, Esplanade Avenue & Bayou Bridge, French Market, Levee & Barracks, Magazine Street, Rampart & Dauphine and Barracks and Slaughter-House divisions. It has been operated by steam dummies and mules, but will be rebuilt for electric motors.

Official Railway Changes.

At the annual meeting of the New Orleans & Northeastern the following officers were re-elected: Charles Schiff, president; C. C. Harvey, vice-president; Genl. John Glynn, Jr., secretary, and H. H. Tatem, treasurer.

S. A. McNeely has been appointed general superintendent, and Mark Wiess, general passenger agent, of the Gulf, Beaumont & Kansas City.

Railroad Notes.

The Chesapeake & Ohio is a liberal contributor to the Young Men's Christian

Association, and it does a great deal to maintain the associations of Richmond, Newport News, Clifton Forge and Glendale, Va.; Huntington, Handley and Hinton, W. Va., and Covington, Ky. In several instances it has erected the buildings entirely at its own expense. Its contributions to this object amount to over \$4000 a year.

The largest number of people carried by one excursion train to Chicago during the exposition was 2529. The Erie Railway Co. made up this train in sections, and it went through to Chicago without an accident. About forty cars were required for this train.

The Dover & Statesboro, a road projected from Dover to Jessup, Ga., 110 miles, but completed only to Statesboro, ten miles distant, has been sold to Augusta capitalists by order of the court. F. T. Lockhart is interested in the matter and bid in the line.

The Savannah, Florida & Western is testing a new fruit car which contains a double roof, an ice tray and inside doors, by which, it is claimed, a temperature of 45° can be uniformly maintained. It is said to be much better than the present style of refrigerator car.

The Arkansas Southern Railway and 10,000 acres of land, with several mills, all belonging to the Southern Land & Lumber Co. at Dry Run, Ark., have been purchased by bondholders of the company for \$122,000.

RECEIVER ECHOLS, of the Chesapeake & Nashville, has been ordered to turn over the property to Walter A. Weber, to whom it was sold by order of the court several months ago. The Chesapeake & Nashville is thirty-five miles long, extending from Gallatin, Tenn., to Scottsville, Ky.

The Port Royal & Augusta has added several new coaches to its passenger equipment for the service between the points named.

The Baltimore & Ohio has just issued an official directory of the system for 1893-94 in a neat volume of 160 pages. It contains directions as to the freight depots at which shipments should be delivered in New York, Philadelphia, Baltimore, Pittsburgh and other cities. There is also an alphabetical list of stations on lines owned, leased or operated by the road and its connections.

The Seaboard Air Line has put in service for its Washington-Atlanta route four of the finest passenger trains in the country. They are composed of a mail, an express and a combination baggage and smoking car, one first-class day coach and Pullman sleepers. They are solid vestibule trains constructed by the Pullman Company especially for the Seaboard Air Line. On the exterior they are finished in a rich dark green olive ornamented in gilt. On the sides of each one are the words "Atlanta Special." With an unusual length, the coaches will seat seventy-two passengers.

The Missouri, Kansas & Texas has formed an alliance with the Kansas City, Osceola & Southern, or "Blair" line, by which a new route between Kansas City and St. Louis will be established when the Bellefontaine bridge over the Missouri river is completed.

EMPLOYEES of the East Tennessee, Virginia & Georgia have accepted a reduction of 10 per cent. in wages, to continue in effect for three months.

WITH a view to influencing the yearly migration of the winter tourists to the health giving lands of the South, the Atlantic Coast Line has issued a tasteful and elaborate pamphlet describing Florida. It is entitled "Florida Beauties of the East Coast." The book contains reproductions in half-tone of numerous photographs of the scenery.

FINANCIAL NEWS.

The Financial Situation.

Business seems to be still undergoing the mending process, and the progress of recovery from the deadness of summer and early fall is still slow. Money continues to accumulate at larger clearing-house cities, especially in New York, where the last of the \$40,000,000 in clearing-house certificates issued have been retired. The bank reserves in New York are rapidly increasing, indicating that the tendency is still towards accumulation of funds until conditions assume a brighter phase. In a word, there is plenty of money to put into business and other ventures as soon as its controllers are satisfied that these ventures are safe. Elsewhere we publish a statement showing how the national banks have been accumulating funds, especially gold. While this may be criticized by some financial authorities, it will tend to greatly increase the confidence in banks of every character, which at this time is greatly to be desired.

At present the outlook abroad is not encouraging, and the indications are that money is going to command a much higher rate of interest in England in response to the demands from the Continent and Australia, which have already become urgent.

Reports from the South indicate that trade is slightly improved. Certificates are still being used in some of the cities, although they are gradually being retired. Cotton is moving in fairly large quantities. The consumption by local mills, such as the plants at Augusta, Ga., and other points, has somewhat increased. No bank failures have been reported during the week. The railroad situation presents several hopeful features. One is the improvement in passenger-train service, which will greatly increase the tourist travel from the North to Florida and New Orleans. Another feature is the development of the traffic from Chicago and the Northwest to New Orleans, which promises to assume very large proportions.

Condition of the National Banks.

Some very interesting figures are found in the summary of the condition of the national banks of the country at the close of business on October 3. This summary has just been made public by Comptroller Eckels. The last call previous to this one was on July 12. In the meantime the number of banks in business had been reduced from 3807 to 3781, the decrease being the result of failures and voluntary liquidations. The aggregate amount of capital stock paid in had been reduced from \$685,786,718.56 to \$678,540,338.93. Though individual deposits had increased somewhat from the lowest figure they reached during the panic and amounted to \$1,451,124,330.55, they were still below the amount on July 12, which was \$1,556,761,230.17. Loans and discounts had been contracted from \$2,005,335,825.63 to \$1,830,667,349.07. The specie on hand had increased from \$186,761,173.31 to \$224,703,860.07 and the legal-tender notes from \$95,833,677 to \$114,709,352. Of the specie on hand \$129,740,438.19 was in gold and \$47,522,510 in gold treasury certificates, against \$95,799,861.68 in gold coin and \$50,550,100 in gold certificates, showing that while the gold reserve in the treasury has been somewhat decreased, there has been a large gain in gold in the vaults of the banks since the importation of gold into this country began.

The table shows that between July 12 and October 3 the amount of national bank notes outstanding had been increased from \$155,070,821.50 to \$182,959,725.90. This increase in the volume of bank notes outstanding is the result of the fall in the price of bonds, which enabled banks to use them with some profit as a basis of cir-

ulation. This increase has continued since October 3, and on the date of the last weekly statement the total amount of national bank notes outstanding was \$209,214,166, making the total increase since July over \$50,000,000.

Taxing Temporary Circulation.

The question of taxing banking certificates or scrip used for temporary circulation is receiving especial attention in Georgia from the fact that Internal Revenue Collector Trammell has issued notice to each bank to report to him all issues of certificates or scrip circulated by it, and all "scrip of cities handled or paid out" by it. The notice contains a ruling of the international revenue commissioner of the following tenor:

"All certificates or notes payable in money and in law negotiable so as to carry title in their circulation from hand to hand are the subject of taxation under the statutes. Clearing-house associations, as well as banking associations, under said laws are required to pay the tax of 10 per centum on hand for the certificates or notes used for general circulation in the community and paid out by them. A city is not required to pay tax on the circulation of its scrip, but where it is used for circulation and paid out either by national banking associations or by State banking associations, such association is required to pay a tax of 10 per cent. under section 26 of the act of February 8, 1875, for the amount to be used."

This decision embodies some of the points of the ruling which the MANUFACTURERS' RECORD published in its issue of September 29. The ruling was obtained from Acting Commissioner Wilson. It is very sweeping in its provisions, and unless temporarily suspended by Congress the 10 per cent. tax will be collected from a large number of Southern institutions. The circular issued at Atlanta by Collector Trammell requires returns to be made from all banks by December 1. Mr. Trammell has also written his deputies throughout the district advising them to instruct banks to furnish these statements at once to his office. Unless the return is made and the tax paid he will proceed against the banks.

West Virginia's Debt.

The attention of financiers, especially those interested in the South, has been directed to an effort being made to refund or effect a settlement in some other way of West Virginia's debt. Negotiations to this end have been carried on for several weeks past with the Mercantile Trust & Safe Deposit Co. of Baltimore, which, through its president, John Gill, has consented to act as a mediator in the matter and to occupy the same position held by the Central Trust Co. of New York in the settlement of the Virginia debt. Mr. Gill was a member of the committee which made a satisfactory adjustment of the Virginia debt. He is familiar with the financial status of the two Virginias and the relations they bear to each other in the original debt created before Virginia was divided.

The Mercantile Trust Company has organized an adjustment company to undertake the settlement of the West Virginia debt. This company assumes all responsibility in the preliminary status of the adjustment. The directors of the adjustment company are: Messrs. John Gill, John A. Hambleton and Richard M. Venable, of Baltimore; United States Senator Eppa Hunton and James B. Pace, of Virginia, and Col. R. P. Chew, of West Virginia. Mr. Gill is president of the company, John A. Hambleton is vice-president and John McHenry is secretary and treasurer.

As a first step in the settlement the adjustment company has secured the consent of William Pinkney Whyte, of Baltimore;

Charles Francis Adams, of Boston, and Major Holmes Conrad, of Virginia, to serve as advisory board.

The present debt of West Virginia is given as \$15,239,371. In the readjustment of the Virginia debt this amount was set aside as the portion which should fall to West Virginia. The State authorities, however, claim that this amount is too large, considering the valuation of West Virginia real estate and personal property and the size of its population at the time the apportionment was made. Outside of this sum there is a floating debt of \$100,000. The assessed valuation of real estate of West Virginia in 1890 was \$121,202,365, and of personal property \$48,725,222, while railroads paid taxes on \$17,237,767 worth of property. The figures show the following increases in value over 1880: Real estate, \$16,000,000; personal, \$10,000,000; railroads, \$10,000,000.

Better Prospects for the South.

The excellent condition of the South, financially, compared with other sections of the country during the period of the business distress, continues to force itself upon the attention of the Northern press. A late issue of the *Wall Street Journal*, one of the most reliable of the New York financial journals, contains the following:

"A capitalist having large Southern connections believes that the South has better prospects today than it has had at any time since 1890. Southern hard times preceded our panic by about three years. Every bubble was pricked, and all institutions were brought down to a sound basis. As proof of this may be cited the fact that the midsummer panic was less severely felt in the South than in any other section of the country. This complete liquidation and readjustment of values on a lower basis forced cotton-planters to raise their crops at the minimum figures. As a result they are now producing cotton at five and a-half cents per pound. Cotton is the chief crop of the South. It is a good crop and will profit more than any other through the repeal of the Sherman silver law."

"There are two weak spots in the Southern industrial situation today. One is the stagnated condition of the iron trade and the other the antagonistic attitude of legislators toward railroads. As for the former, Southern fields can produce iron more cheaply than their Northern competitors, and are destined to eventually control the trade. Any revival in the iron and steel business of the country will be almost immediately reflected in the South."

Against the Bank Tax.

The business men of Augusta, Ga., at a recent meeting held in that city put themselves on record as opposing the present tax on State banks. The sentiment was expressed in the following resolution adopted:

That the federal tax laid upon bank notes is sued or paid out by State banks—a measure called for by the financial necessities of the federal government at the time of its imposition—has outlived that necessity, and, like other "war measures," should become a matter of history rather than remain an existing financial farce. We simply ask Congress to lift its hand from the States, so that they may resume the relations to State banks which they always held to those institutions prior to 1864. It will, then, be for the States, in their wisdom, to authorize or not to authorize State banks to issue notes.

A committee was appointed to prepare statistics showing Augusta's banking capital before and since the passage of the State bank act. These figures will be sent to Georgia's representatives at Washington for an additional argument in favor of the repeal.

New Financial Institutions.

The Mountain State Fire Insurance Co. has been organized at Wheeling, W. Va., with \$10,000 capital. W. H. Jones and

W. F. Henke, of Wheeling, are among the incorporators.

The Newport News Building & Loan Co. has established a branch in Lynchburg, Va.

The Farm and Home Savings and Loan Association has been incorporated by T. W. Vandiver and others with \$2,000,000 capital. The home office is to be at Nevada, Mo.

G. S. Kieffer and T. M. Berry are among the organizers of the Citizens' Bank, to begin business at Cole Camp, Mo., with \$11,000 capital.

The Benefit & Life Insurance Co. of Wheeling, W. Va., has been organized by S. L. Sprague, T. R. Jennings and others with a nominal capital of \$2500.

The Farmers' Exchange and Loan Association has been organized at Ocala, Fla., with \$10,000 capital.

It is reported that a new bank is to be organized in Jasper, Fla., to be conducted as a State bank.

A branch of the People's Building and Loan Association of Geneva, N. Y., has been organized at Port Lavaca, Texas.

A bank has been organized at Summerville, S. C., to be called the Bank of Summerville. Its capital is to be \$25,000. Julian Fishburne and H. W. Muckenfuss are among the incorporators.

New Bond and Stock Issues.

The Georgia legislature has authorized the corporation of East Point to issue \$10,000 in bonds with which to build schoolhouses.

The Investment, Loan & Construction Co. of Norfolk, Va., has opened its books for subscriptions to its capital stock, which is \$500,000.

A bill has been introduced into the Georgia legislature to authorize the State to issue \$360,000 in bonds for refunding the portion of the State debt which matures in 1894.

Interest and Dividends.

The Orleans Railroad Co. has declared a dividend of 2 per cent., payable at the main office in New Orleans.

Interest coupons due on the Virginia Midland general mortgage bonds are being paid by the Central Trust Co. of New York.

Failures and Suspensions.

The firm of Hess, Henly & Co., wholesale dealers in furnishing goods at Louisville, Ky., have made an assignment. Assets and liabilities are each reported to be \$350,000.

Southern Bank Changes.

The banking firm of Brown & Lowndes, of Baltimore, has been dissolved. Charles D. Lowndes and Frank Redwood have formed a copartnership under the title of Lowndes & Redwood.

Clinton P. Paine and P. B. McLaren, of Baltimore, have established a banking-house in Baltimore with the title of Paine & McLaren.

N. A. Crockett appointed cashier and John M. Harwood assistant cashier of the People's National Bank of Pulaski, Tenn.

Financial Notes.

THE Charlotte (N. C.) Building and Loan Association has elected P. M. Brown, president; E. L. Martin, vice-president; C. L. Hunter, secretary, and Heriot Clarkson, attorney.

THE Bank of Leesburg, Fla., which was obliged to suspend during the recent monetary stringency, has resumed business.

MR. CHARLES TURNER, of Fort Payne, Ala., writing to the MANUFACTURERS' RECORD concerning the recent report that he had purchased the Bay State furnace, says there is absolutely no truth in it.

PHOSPHATES.

Heavy Phosphate Shipments from Fernandina.

FERNANDINA, FLA., November 6.

The phosphate shipments from this port for October were 17,624 tons, making the total for the year to date 99,932 tons. In their monthly circular John G. McGiffin & Co. report the October shipments as follows:

Dunnellon Phosphate Co., 2333 tons by steamship Moorish Prince for Gothenberg and Stockholm, October 4.

Cie des Phosphates de France, 2418 tons by steamship Oaklands for Hamburg, October 4.

Cie des Phosphates de France, 1940 tons by steamship Swedish Prince for Stettin, October 7.

Anglo-Continental Guano Works, 2203 tons by steamship Dora for Stettin, October 9.

Illinois Phosphate Co., 2130 tons by steamship Cyanus for River Thames, October 16.

Cie des Phosphates de France, 2200 tons by steamship Norlands for Rotterdam, October 17.

Pebble Phosphate Co., 2442 tons by steamship Snilesworth for River Tyne, October 23.

Dunnellon Phosphate Co., 1958 tons by steamship Egyptian Prince for Stettin, October 28.

The following charters for November loading are reported by John G. McGiffin & Co.: Cie des Phosphates de France, steamships Edmondsley, May, Avelona, Dracona and Justin.

Dunnellon Phosphate Co., steamship East Gate.

Pebble Phosphate Co., steamship Para.

Anglo-Continental Guano Works, steamship Tonsberg.

J. M. Lang & Co., steamship British Prince.

Illinois Phosphate Co., steamship Wetherby.

The estimated shipments for November are 16,000 tons. The stock at this port amounts to 4792 tons. Attention is called to the fact that the foregoing eight steamers, carrying more phosphate than ever went out of a Florida port during any month, were loaded without having incurred a particle of demurrage, and that there was no detention whatever in sailing on account of tides.

The Fernandina bar can now be rated at nineteen feet; undoubtedly we can carry vessels drawing nineteen to twenty-one feet safely over the bar where only eighteen feet could have taken two years ago. Shipments through this port for the months of November and December will be quite heavy. Many inquiries are now being made relative to the shipments of phosphate to coastwise ports. Heretofore our business has been almost entirely for foreign ports. Sail vessels are offered at the rate of \$1.60 to \$1.75 per gross ton, Fernandina to New York, Philadelphia or Baltimore.

E. P. ADAMS.

Punta Gorda's Phosphate Shipments.

Mr. K. B. Harvey, deputy collector of the subport of Punta Gorda, reports the shipments of phosphate for the month of October as follows: October 3—Schooner Chauncey E. Burk for New Orleans with 1200 tons, shipped by the Peace River Phosphate Co. October 4—Steamship Somerhill for Helsingborg, Sweden, with 2950 tons, shipped by Comer, Hull & Co. October 12—Steamship Evelyn for St. Nazaire, France, with 3081 tons, shipped by Comer, Hull & Co. October 20—Steamship Angerton for Plymouth, Eng., with 1750 tons, shipped by the Peace River Phosphate Co. October 30—Schooner Annie Millard for Pensacola, Fla., with 875 tons, shipped by the Peace River Phosphate Co.

The total shipments amount to 9856 tons, of which 2075 tons were coastwise and 7781 tons were foreign. The foreign shipments for November are expected to be very large.

Phosphate Shipments from Port Tampa.

The shipments of phosphate from Port Tampa, Fla., for the month of October were as follows: October 6—British steamship Cape Comino for London, drawing nineteen feet six inches, with 2003 tons, shipped by the Cie des Phosphates de France. October 11—Schooner James Judge for Mantua creek, N. J., drawing sixteen feet six inches, with 1043 tons, shipped by the Florida Phosphate Co., Limited. October 16—British steamship Hesse for Stettin, Germany, drawing nineteen feet six inches, with 2308 tons, shipped by William Bradley. October 23—British steamship County Derry for Harburg, drawing seventeen feet, with 2201 tons, shipped by the Netherlands Phosphate Co. October 26—British steamship Wandle for Stettin, Germany, drawing nineteen feet two inches, with 1972 tons, shipped by the Anglo-Continental Guano Co. The total shipments aggregate 9527 tons, of which 1043 tons were coastwise and 8484 tons foreign.

River Miners Still Idle.

As previously stated, the phosphate industry of South Carolina is now in an unsettled state, and further information received during the week shows that under present conditions mining companies will require special guarantees from the State before resuming operations. Only one of the river-mining companies has accepted the terms offered in the proposition of the State board in reference to the royalty. The fiscal phosphate year closed on October 31, and the following table represents the receipts of the State from the phosphate royalty for the year, with the corresponding figures for 1891-92. The receipts, which are given in dollars, represent tons of rock mined and shipped as well:

Month.	1891-92.	1892-93.
November	\$7,599 99	\$5,661 80
December	2,041 43	25,358 22
January	8,840 98	9,207 09
February	9,555 62	11,908 90
March	14,389 34	47,865 07
April	4,907 75	17,066 55
May	17,848 65	9,093 52
June	20,135 70	29,021 35
July	32,206 33	33,715 78
August	23,825 83	19,751 30
September	13,179 30	19,311 17
October	12,466 35	5,566 68
Total	\$167,918 27	\$233,533 43

From the above statement it will be seen that the increase of revenue for the year over 1891-92 amounts to \$65,615.16, being larger than any previous year in the history of the phosphate industry. The stock of phosphate on hand at the close of 1891-92 amounted to 78,183 tons, while the figures for this year are not yet to hand. It is stated that the companies had about 40,000 tons on hand before the storm in August last, of which about 25,000 tons have been sold and shipped since that date on which the royalty has been paid. According to these figures about 15,000 tons of rock would remain on hand at the close of the year.

The Outlook for Ammoniates.

Thos. H. White & Co., of Baltimore, in their circular for November, say: "During October there has been as usual a large business done in the products of packers' tankage on six months' contract. Sales foot up about 15,000 to 18,000 tons, nearly all to actual consumers, at prices ranging from \$2.10 and ten cents delivered, basis Baltimore, freight at the beginning of the month, to \$2.50 and ten cents at the close. There has been an indisposition to purchase for early delivery alone, and in some quarters a small accumulation of stock is apparent. The demand seemed to

run more toward the higher grade of ammoniates, and blood has advanced steadily and with only slight fluctuations from \$1.80 per unit f. o. b. Chicago the latter part of September to \$2.50 per unit on late sales for November-December delivery. We have thought the market was forced unreasonably and expected some reaction, but a decline in price brings in new buyers and prices harden again.

"We have made a close investigation lately as to the sources of supply of ammoniates the coming winter. The best authorities in regard to the hog crop predict a shortage even greater than last year. The killing in the four months, November to February, was about 4,500,000 hogs. Granting that the receipts will be, say, 10 per cent. greater this year, which very few believe, this would be 5,000,000, which would produce only 17,500 tons of blood and tankage, the equivalent of which is already contracted for to actual consumers. The product of material from cattle-killing about equals that made from hogs. If the demand for ammoniates is to equal that of last winter, prices are still low. Last year we supplemented our shortage by importations from Europe, variously estimated from 7,000 to 10,000 tons. This source of supply will not be available, as prices abroad are equal to, if not higher than ours. Another important feature not to be overlooked is the price of sulphate of ammonia, which this time last year was less than three cents per pound, laid down from abroad, and continued so until January, which permitted large importations, whereas at present we cannot import under 3.42½ cents.

"How far nitrate of soda can be utilized as a substitute for animal matter is a question, though we do not believe it will be thus used to any great extent. The fish catch has proved small, we think not over 15,000 to 20,000 tons, and has been sold to consumers, very little, if any, remaining on the market."

Phosphate Markets.

CHARLESTON, S. C., November 6.

The movement in phosphate during the past week has been quite active, and the market steady under a fair domestic demand. The offering of river rock is very light, while there is a good prospect of a large output of land rock. Prices continue very steady, and the tone of the European market is towards a higher range of prices. Dried rock is quoted \$5.00 to \$5.50 f. o. b. Charleston, and \$4.50 to \$5.00 Ashley river. Ground rock is steady at \$7.50 to \$8.00 in bags. The clearances of phosphate rock for the week are as follows: Schooners Blanche Hopkins, 875 tons; E. C. Middleton, 650 tons, and Lida J. Lewis, 801 tons, all for Baltimore; schooner May Williams cleared with 825 tons for Weymouth, Mass.—total for the week, 3151 tons. The total domestic shipments from this port since September 1 aggregate 19,319 tons of crude rock and 300 tons of ground, against 26,666 tons of crude and 876 tons of ground. The freight market is steady, with rates \$1.75 to \$1.80 to Baltimore.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, November 9.

The local phosphate market has been quiet during the past week, but the tone of the market is firm. There is some inquiry from fertilizer manufacturers and several sales of round lots were closed during the week for future delivery. European advices represent the market as very steady and prices show a hardening tendency. At points of production there is considerable activity and prices are firm at quotations. South Carolina rock is quoted \$5.00 to \$5.50 for Charleston, \$4.75 to \$5.00 for Ashley river and \$5.00 to \$5.25 for Ashpoo. Florida rock is firm at \$5.00 for 60 per cent. river pebble, \$5.50 for 65 per cent., and \$5.75 to \$6.00 for 70 per cent., all f. o. b. Charlotte Harbor or Tampa. The

receipts of phosphate rock during the week were as follows: Schooners Emma C. Knowles, with 910 tons; Katie J. Ireland, with 930 tons, and B. F. Lee, with 65 tons, all from Charleston—total 2490 tons. We note charter of schooner John B. Coyle, Charlotte Harbor to Baltimore. Freight rates are steady and unchanged, with a fair offering of tonnage. Rates from Charleston to this port \$1.80 to \$1.85.

FERTILIZER INGREDIENTS.

Since the large business of last week made at Chicago in blood at \$2.50 f. o. b. for November and December there has been a lull in the demand, and producers are offering more freely for the later months at same quotations. The inquiry continues good for tankage, January and forward delivery. There is a slight accumulation of prompt tankage and our quotations have been shaded for early delivery. Nitrate of soda is steady, with a good demand and ample supply. The following table represents the prices current at this date:

Sulphate of ammonia.....	\$ 3 30@	\$3 50
Nitrate of soda.....	1 87½@	2 00
Hoof meal.....	2 50@	2 60
Blood.....	2 75@	3 00
Azotine (beef).....	2 75@	2 80
Azotine (pork).....	2 75@	2 80
Tankage (concentrated).....	2 40@	2 50
Tankage (9 and 20).....	\$2 35 and	10 cts.
Tankage (7 and 30).....	24 00@	25 00
Fish (dry).....	27 00@	28 00
Fish (acid).....	18 00@	20 00

Grading Louisiana Rice.

At a recent meeting of the rice committee of the New Orleans Board of Trade it was decided to recommend that in future rough rice be quoted by grade, as follows: Fancy, prime, good, fair ordinary, common and inferior. A subcommittee, consisting of Messrs. H. Gehl, Columbus H. Allen, Emile Dupre, Frank Delery and Raul Dupre, has been appointed to select types of these grades. All the members of this committee are brokers and experts. Heretofore producers have had but little information as to the quality of the rice shipped to market, and under the present system it will be much more satisfactory to all parties in the trade. It is said that in adopting the grading system with rice it will be possible to handle it in bulk and store it in elevators as grain is now handled.

The receipts of rice at the port of New Orleans for the month of September last were the smallest for a number of years. The receipts for October for twelve years past, compiled by Mr. Thomas J. Salvant, show the light character of this year's movement:

RICE RECEIVED IN OCTOBER FROM 1881 TO 1893.

Year.	Rough Sacks.	Clean Barrels.
1881.....	109,034	7,763
1882.....	93,836	6,874
1883.....	66,533	7,659
1884.....	54,506	6,756
1885.....	287,030	10,492
1886.....	135,744	10,476
1887.....	126,466	4,777
1888.....	193,017	7,026
1889.....	215,251	2,267
1890.....	139,439	1,095
1891.....	191,102	.....
1892.....	312,353	89
1893.....	191,631	1,604

Farmers Object to the Sale of Seed.

Some of the Alabama farmers and land owners are expressing alarm because of the extensive sale of cottonseed by the planters, and the removal thereby of much fertilizing material which is not replaced by any other elements. It is claimed that this impoverishes the land to such an extent that the valuable prairie belt will soon become barren and unfruitful. When the seed is returned to the land in the form of a fertilizer the soil deteriorates very slowly from the succession of crops produced; without this annual return the process of exhaustion is very rapid. The idea is to have legislation in the matter and have a law to regulate the traffic. It is announced that the Commercial and Industrial Association of Montgomery, Ala., will bring the matter up for discussion at its next meeting.

COTTONSEED OIL.

This department is open for the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

American Cotton Oil Co.

The stockholders of the American Cotton Oil Co. held their fourth annual meeting at the refinery in Guttenburg, N. J., on the 2d inst. Only one new director was elected, this being to take the place of the late Jules Aldridge. The directory is now as follows: Edward D. Adams, John R. Bartlett, Thomas E. Cheney, W. A. C. Ewen, James A. Garland, Charles Lanier, Mayer Lehman, Alfred B. Mason, George A. Morrison and E. R. Wilson, New York; John H. Moxon, St. Louis, vice J. Aldridge, deceased; N. K. Fairbank, Chicago; M. Frank, Atlanta; Garret A. Hobart, Paterson, N. J., and E. U. Eckhardt, Little Rock, Ark. The new directory then proceeded to the election of officers, which resulted as follows: Chairman of the board of directors, Edward D. Adams; finance committee, Edward D. Adams, chairman; George A. Morrison; Meyer Lehman, president; Thomas R. Cheney, second vice-president; Robert P. Munroe, secretary, and Justus E. Ralph, treasurer.

The annual report of the American Cotton Oil Co. for the year ending August 31 shows that during the year there has been expended for new construction \$953,727; from this has been deducted the amount realized from sales of real estate, buildings, machinery, etc., \$110,510, and \$23,182 from depreciation of property, buildings torn down, destroyed by storm, and machinery sold for less than previous valuation, making a total of \$133,692; net cash valuation of additions \$820,155.

The real estate, buildings, machinery and other property, exclusive of the quick assets, had an actual value (as ascertained by two separate appraisals of the entire property) at the commencement of the past fiscal year of \$9,567,531. The total appraised value of real property, exclusive of quick assets, on August 31, 1893, was \$10,387,666; cash in banks, \$671,395; bills and accounts, \$2,046,490; marketable products and supplies on hand available in the business, \$4,379,758; the cash value of all the property of the organization, \$17,485,311. After deducting debenture bonds and all other forms of indebtedness, \$4,715,289, there remains \$12,771,022 as security for the \$10,198,600 of preferred stock, equal to 125 per cent. of its par value.

In manufacturing properties five new crushing mills have been completed during the past year and will be in operation this season, as follows: Two in Alabama, one in Mississippi, one in Texas and one in Louisiana. The company now owns seventy-three crude oil mills, fourteen refineries, four lard and cottonseed plants, nine soap factories, fifteen cotton gin-neries, four cotton compresses and eight fertilizer-mixing establishments, making a total of 127, located in sixteen States, all absolutely free from mortgage or other lien. The new properties constructed or acquired consist of crushing mills at Demopolis and Mobile, Ala., Port Gibson, Miss., Denison, Texas, and Vidalia, La.; cotton gineries at Montgomery, Ala., Newberne, N. C., 59-120ths, and 123 seedhouses with storage capacity of 11,070 tons. The properties sold are 24-120ths of Gayoso, Memphis, Tenn.; Planters', Algiers, La., and Van Buren Ginney, Van Buren, Ark. The properties now dormant are the Gretna Mills at Gretna, La.

Exports of Cottonseed Oil.

The chief of the bureau of statistics at Washington, D. C., reports the exports of cottonseed products for the month ending September 30, 1893, and for the nine

months ending September 30, with the corresponding exports for the same periods in 1892, as follows: Cake and oilcake meal exported during the month 31,900,202 pounds, valued at \$401,374, and for the same period in 1892 they amounted to 41,634,505 pounds, valued at \$489,308. The exports for nine months amounted to 506,432,681 pounds, valued at \$6,322,179, and for same period in 1892 they amounted to 626,818,013 pounds, valued at \$7,304,064.

EXPORTS OF COTTONSEED OIL.

Countries.	Month ending September 30.		Nine mos. ending Sept 30.	
	1893.	1892.	1893.	1892.
United Kingdom	272,497	40,577	726,985	619,191
Germany	182,612	3,860	1,101,319	793,294
France	90,414	151,938	288,952	1,216,106
Other countries in Europe	365,904	105,099	2,546,063	5,937,732
British America	37,258	12,567	258,117	203,536
Mexico	76,028	3,674	803,831	29,692
Cuba	.....	16,899	12,975	72,199
Porto Rico	.....	122	300	1,425
San Domingo	2,783	886	14,073	10,698
Other W. Indies and Bermuda	21,092	24,801	215,348	165,621
Brazil	23,490	25,101	216,863	274,918
Other countries in S. America	33,129	10,250	134,585	67,211
Asia & Oceania	760	6,046	4,541	19,208
Other countries	4,977	.....	9,077	23,838
Total gallons	1,110,944	401,820	6,332,929	9,434,669

The total value of exports of cottonseed oil for September, 1893, was \$472,539, and for the corresponding month in 1892 it amounted to \$138,955. The total value for nine months ending September 30, 1893, was \$2,859,522, and for the same period in 1892 it aggregated \$2,325,072.

The Markets for Cottonseed Products.

NEW YORK, November 9.

The receipts of cottonseed oil during the past week have been about 6500 barrels, about one-half of which has been from New Orleans, and this indicates that the movement of cottonseed oil has fairly begun. The bulk of this oil has already been sold to arrive, and hence will not come upon the market. The exports for the week are only about 1200 barrels, and the general advices from the foreign markets are of a disappointing character. The advices indicate that considerable oil has been shipped abroad for sale on consignment or previously sold to arrive, so that the foreign markets appear to be pretty well supplied and are not now disposed to buy much more. Of course, occasional orders come into the market for moderate lots. Prices during the week have been steady to firm, in consequence of the practical exhaustion of stocks, and thirty-seven cents has been paid for prime crude, forty to forty-one cents for prime yellow and forty-two cents for choice yellow. Efforts to sell at outside figures today, however, have not met with any success. Off oils are irregular in price and depending upon the fancy of the buyers. We should quote off yellow at thirty-seven to thirty-nine cents, according to quality, and reddish oils are thirty-five to thirty-seven cents. Our local lard refiners continue to buy only as actually needed and show no disposition to accumulate stock. The West has bought pretty freely of oil until the past week or ten days, and seem now disposed to wait further developments before taking hold of oil to any extent. Soap makers are only buying small quantities, because they consider the price of oil too high. We do not think the general situation has changed materially during the week under review. Foreign orders for off oil keep below prices ruling here, and there is no particular activity yet in general business to inspire any confident buying among the trade generally. The general expectation in the trade is in favor of lower prices for oil so soon as there is any accumulation of stocks. Messrs. Fairbanks & Co.'s cable advices with regard to the estimated stocks in Europe, added to the estimated stocks for this country, show how deficient the supply of

lard is. Our market is likely to continue quiet while buyers pursue the present hand-to-mouth policy. Still there must be a continued large consumption of oil for compound lard purposes. The hand-to-mouth policy pursued in oil is only similar to that in other branches of trade, so that general business is very slowly but still steadily getting on its feet. Active business can hardly be expected nor any confident buying of any merchandise until more confidence is developed.

HOPKINS, DWIGHT & CO.

NEW ORLEANS, November 6.

The New Orleans cottonseed-product market in the past week has not been very active, except toward the end, when the price of oil declined some two cents within twenty-four hours. This decline came so suddenly that the mills could hardly realize it, and were somewhat disconcerted and unable to determine, with the falling price, whether to sell or to hold off. The receipts of seed have been better the last week than any week previous, but seed is still coming in slowly from the river and bends where New Orleans generally draws its supply. Seed has been sold at as high a price as \$18.00 on the river bank in the past two weeks. We understand, or rather it is rumored, that the mills will soon come together and formulate some plan whereby the price of seed will be lowered. We quote prime crude cottonseed oil loose, basis New Orleans freights, at twenty-nine to thirty cents; refined, thirty-five to thirty-seven cents, according to quality and brand; meal jobbing at depot in carload lots, \$20.00 per ton of 2000 pounds; cake and meal, \$23.00 per long ton f. o. b.; soap stock, one and a-quarter to one and three-eighths cents; linters, A, three and three-quarters to four cents; B, three and a-quarter to three and a-half cents, according to style and staple; ashes, \$17.00 to \$18.00 per ton, with none offering.

JAMES RAINEY & CO.

ROTTERDAM, October 21.

The market for cottonseed oil has been very firm during the past week and prices are advancing. The butter-makers are using much oil now, and the stock in first hands is decreasing rapidly and soon will be very small; therefore, the few holders of oil are advancing their limits. The price for choice oil is now thirty-seven guilders ex warehouse, and this price has been paid this week for some parcels. New oil has not yet made its appearance on the market, and it seems that a good many of the oil refiners in America are not yet inclined to sell their refined oil. Prices of lard are again much higher, and, therefore, the lard refiners will certainly buy much cotton oil at good prices. Some business has been done here in oil of the new crop at about thirty-six guilders per 100 kilos, c. i. f. terms. This price is equal to about forty-eight cents per gallon of seven and a-half pounds, free on board in one of the American ports. This price is obtainable for strictly choice cottonseed oil, and if the oil refiners are shipping their oil to our market, they can surely reckon on obtaining forty-eight cents per gallon. The offers from America, however, are very limited, and it seems that the oil refiners expect to obtain still better prices later. It is, of course, difficult to say from this side of the ocean how the crop of cottonseed has been and how prices will run during the season. Under all circumstances, thirty-six guilders is a good price for cottonseed oil, and this figure was never paid here for cotton oil before November, 1892. In all other years a price of thirty-two guilders was considered as very high. As written, the buyers are inclined to pay thirty-six guilders for choice oil, and, therefore, offers at this price will find acceptance here.

G. W. SANCHES.

[NOTE.—The price in guilders per 100

kilos multiplied by 1.34 will give the price in cents per gallon.—ED.]

Cottonseed-Oil Notes.

THERE is trouble between the cottonseed-oil mills at Houston, Texas, and the railroads entering that city on account of a blockade of cottonseed, there being now 600 or 700 cars of seed in the yards which cannot be gotten to the mills fast enough to keep them supplied. The millmen announce that they can break the blockade in twenty-four hours if the roads will put the cars at the mills. The railroads, it is said, have not switching facilities sufficient, and the result is expected to end in the millmen refusing to pay the customary demurrage chargeable on freight remaining in cars after a specified time.

THERE was quite a large meeting of cottonseed shippers at Sandersville, Ga., on the 2d inst., representatives from all along the line of the Central Railroad being in attendance. The object of the meeting was to discuss the serious predicament in which, as the shippers stated, they had been placed by the oil mills of Georgia. They complain that the oil mills have combined to fix the prices of seed, thereby shutting out all competition, and as a result the producer and shipper of cottonseed is at the mercy of the mills. The shippers allege that the mills of Alabama and other States are paying \$16.00 to \$20.00 per ton for seed, while the mills of Georgia only offer \$11.00 per ton. The meeting adjourned after fully discussing the question and decided to call a meeting in Macon this week, at which a large attendance is expected. In the meantime all the seed shippers are requested to hold their purchases or ship them out of the State to mills which are willing to pay higher prices.

THE Gulf City mill of the Alabama Cotton Oil Co. at Mobile, Ala., has been completed, and on the 30th ult. steam was turned on and the plant was started in operation again after being idle about two years. The new mill is situated at the junction of the Mobile & Birmingham and Mobile & Ohio Railroads, about three miles north of the city and about half a mile south of Pritchard's Station. The work of construction was commenced several months ago and has been pushed forward with considerable energy, so that everything is working smoothly.

THE Merchants and Farmers' Cottonseed-oil Mill at Groesbeck, Texas, started its machinery on the 30th ult. and found everything in working order. The mill will commence crushing seed this week, and has stock enough on hand for a four-months run.

THE work of laying mains and putting in hydrants for protection against fire at the cotton-oil mill at Valasco, Texas, was finished on the 2d inst. The oil mill and gin-yards have twenty-five hydrants, from which powerful streams can be thrown over the buildings.

THE exports of cottonseed products from New Orleans for the week ending November 2 were 1120 sacks meal, 150 tons oilcake and 270 tons cottonseed cake, all for Liverpool. The exports of cottonseed oil since September 1, 1893, aggregate 400,700 gallons, against 840,400 gallons for the corresponding period last year.

THE exports of cottonseed oil from the port of New York for the week ending November 2 were 46,440 gallons, distributed as follows: British West Indies 1311 gallons, British Guiana 7108 gallons, Germany 33,264 gallons, Mexico 3407 gallons, British America 1250 gallons and San Domingo 100 gallons. The total exports since September 1, 1893, aggregate 1,017,756 gallons, against 2,177,067 gallons for the corresponding period last year.

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BALTIMORE, NOVEMBER 10, 1893.

ACCORDING to advices from Mobile the export trade of that city may be greatly enlarged by the establishment of another line of steamships to ply in the Mexican trade. The Mexican Railway Co. announces its intention to make Mobile an export point for its American business to Mexico. This will tend to make the Alabama seacoast city of more importance than it has ever been before.

THE idea of inducing the representatives of foreign governments at the Columbian Exposition to visit the South before returning home, which we advocated in a recent editorial, has been taken up by the Chamber of Commerce of Knoxville, Tenn., which has asked the Boards of Trade of Memphis, Nashville and Chattanooga to co-operate with it in extending an invitation to the foreigners to inspect Tennessee's resources and industries. The matter has been placed in the hands of Secretary Frierson, of the Knoxville body.

THE stockholders of the Louisville & Nashville Railroad Co. at the general meeting held in Louisville voted to increase the capital stock to \$60,000,000. It seems to be settled that the issue of new stock has nothing to do with the purchase of the Chesapeake, Ohio & Southwestern road, and that it is not issued to meet any obligation. The question arises, is it the intention to acquire other lines with the new stock, as has been argued by many who have been watching the course of the company for some time. The next few days will probably see this question answered. The resolution approving the increase in capital was carried by a vote of 315-199 shares against 110.

STEP by step the central States, such as Indiana and Illinois, are becoming more closely associated with the Southern cities. The commercial relations between Chicago, New Orleans, Atlanta and other points are growing more intimate. The Chicago business men appreciate the advantages of more direct trade with the South, as is shown by the manner in which they are endeavoring to break down the barrier of what they claim is a freight tariff which discriminates in favor of Eastern cities. The

Chicago freight bureau has taken the matter in hand, and proposes to force a rearrangement of rates. This will be of untold benefit to the South, and the increase in business should be felt very extensively by both the merchants and the railway lines.

SEA ISLAND cotton has been coming forward this season in a manner that is quite unprecedented. All but a comparatively small amount of this crop is received at Savannah, and the receipts at that port from September 1 to the end of last week aggregated 20,244 bales, as compared with 11,402 bales during the same period of last season. In spite of the heavy receipts the market has been steady, and prices have been fairly maintained. The unusually heavy receipts at this early stage of the season do not indicate an abnormally large crop, but the weather has been particularly favorable for the maturing and harvesting of the crop, and the planters have rushed their cotton to market in order to realize upon it as quickly as possible. It is estimated that the crop of this season will be about the same as last, which was about 45,000 bales, but it would have been very largely in excess of this amount had not the August storm on the south Atlantic coast destroyed a vast quantity of the growing crop.

Settling West Virginia's Debt.

The proposed settlement of West Virginia's debt has aroused much interest, even in financial circles whose members do not deal in Southern securities. The feeling in New York is that men of such prominence as Charles Francis Adams, Gen. John Gill, William Pinkney Whyte, Senator Hunton and the others who have promised to lend their assistance would not assent unless they felt assured of making a satisfactory and equitable adjustment. There is no doubt that with the State debt in its present condition West Virginia has a cloud hanging over its prospects. With this cloud cleared away the future of the State promises to be brighter than it is even now. The settlement of the indebtedness will not only benefit West Virginia, but indirectly the whole South. To quote the words of an extensive dealer in Southern securities: "It is a sign that the South is willing to adjust its old obligations, as such a course will not only improve its credit, but increase its wealth, since its bonds will find a readier market."

No question exists as to the ability of the men who are interested to carry the project to a successful result, and it only remains to see how the bond owners will regard the proposition.

Free Coal and Ore.

The manufacturers and business men of Alabama are thoroughly alive to the effect that free coal and ore may have upon the interests of that State, and have already taken action to protect the industries which may be so vitally affected in the mining and manufacturing districts. When the first intimation that Congress might take action on this point was received, the Commercial Club of Birmingham appointed a committee to investigate the matter and report at an early date. This committee has made exhaustive inquiries and finds

that "free coal and ore would not only seriously, but perhaps disastrously affect our producing industries through loss of market on the Atlantic seaboard by increasing the severity of competition in the West, but would practically rob us of that development in steel-making to which we have approached so near, for which we have all the materials at home, and which only waits on the confidence of capital that present conditions as to competition, and markets are assured for the present and the future."

Such is the language of the report which the club adopted. It was further resolved to appoint suitable committees to take charge of the petitions to be sent to Congress. These petitions are to be circulated throughout the State for signatures. Special emphasis is laid on the fact that Alabama is rapidly nearing the period when mills within her borders will be turning out steel produced from Alabama ore with the aid of Alabama coal and by Alabama labor. Under these circumstances it is only natural that every citizen of the State who takes any interest in its welfare or appreciates his own interest should do everything in his power to prevent any change from the present legislation on the subject.

Winter Travel from the North.

The prospects for railway travel to the South this winter are unusually bright. The fact that the outbreak of yellow fever has been confined to the locality around Brunswick, Ga., has averted any fear that winter tourists might seek other parts of the country to spend the winter, and the agents of the various lines interested are preparing for a large business. Already many inquiries are being received by Northern ticket agents about the Florida and gulf-coast resorts, and good judges predict that the number of travelers will be surprisingly large, despite the Columbian Exposition, which many attended who otherwise would have taken a winter trip. Preparations being made for the business bear out this statement. The Atlantic Coast Line and Richmond & Danville Railway systems will be active competitors for it. Each has arranged a superb service of sleeping coaches and solid trains between New York and Florida. The time between the metropolis and the principal cities has been shortened considerably, and each company will make every effort to obtain its share by offering the inducements of fast time and elegant equipment, so that passengers can make the journey with ease and comfort.

The Illinois Central and Louisville & Nashville are also to put on special sleeping cars from north of the Ohio river. A feature of the former's service will be through cars between Sioux City, Ia., and New Orleans, thus giving people in the Northwest unusual facilities for reaching the Southern resorts.

This tourist travel has an importance which benefits the South in far more ways than merely the money which is spent. Many a business man who has gone to Florida or elsewhere for his health or for pleasure has had his attention drawn to the opportunities presented for investment of capital by personal observation, and some of the most ex-

tensive enterprises in the South have had their beginning in this way. A rule the people who are among the winter travelers are persons of wealth only too willing to place some of it at least where it will pay them to do so. Consequently every effort made to encourage this kind of travel is of so much benefit in developing the whole section.

Tell the Truth About the South.

The period is close at hand when the South may receive the benefit of a large amount of outside capital. There are many reasons, as we have before stated, for believing that, with business restored to its normal conditions, this section will attract the attention of many capitalists who have never before dared risk their funds below Mason and Dixon's line. In hundreds, it might be said thousands, of cases the alluring pictures of the West, with its fields of golden grain, cities built in a month and its apparently boundless resources, so vividly and too often so romantically drawn by land speculators, railway agents and others, have caught their attention, especially when the chance of obtaining 8 to 12 per cent. interest on their money was held out. The result has been millions of dollars of Eastern capital invested in lands, in mortgages on unimproved property or in State bank stock which has often paid over 12 per cent.—until the collapse of the present year came. How much of this money has been lost in almost worthless securities cannot now be estimated, but it reaches into the millions, and it has taught the country a bitter lesson which those who suffered by it will never forget.

Of course, this does not apply to all the Western States by any means, for large amounts of money were placed in towns and counties where the situation was honestly portrayed and where the investment has been profitable. But the disasters elsewhere have given many of these localities in common with the rest a blow from which their credit may never recover.

The South may be on the threshold of another "boom," but it should be an honest boom. If there was ever a time when truthfulness in describing the advantages of a village or city should be followed, it is now. And why not tell the truth? There are enough facts regarding the climate, the resources, the cheapness of labor, the transportation facilities, the character of the people and the soundness of Southern financial institutions to induce an investment of capital such as has never before been imagined by the most visionary land agent. Every State in the group represents opportunities for the placing of capital in such a way that it will net the investor a handsome return. But these opportunities must be described by fact and figure, not by glittering, sweetly-sounding phrases which outsiders have heard and read *ad nauseam*.

If the truth is told the South will enter upon an era of permanent prosperity, but if investments are sought in localities where the coal or ore or cotton or city will be produced or built only in the minds of the owners or agents, the money which buys that property may cause injury to the whole section a hundred times greater than the sum it represents.

Give the facts.

CORRESPONDENCE

[The MANUFACTURERS' RECORD assumes no responsibility for the statements of correspondents, nor does the publication of a communication in these columns indicate that we endorse the views expressed.]

A Good Outlook in Fernandina.

FERNANDINA, FLA., October 31.

Editor Manufacturers' Record:

There is beginning to be much brighter outlook for the lumber and general business of this port. We are advised that so far nine vessels have been chartered to take cargoes of lumber during the month of November and, although the prices remain about the same, there is a better demand.

Eight cargoes of coal, two of fertilizer and one of salt are chartered for Fernandina, and tonnage of about 5000 is due to reach here during the month of November.

The Southern Fuel & Supply Co. has just organized and is prepared to do the greater part of the coal business of Florida. They expect to bunker a good many of the steamships entering this port. They will also locate yards at St. Augustine and Jacksonville. Their main shipping point will be Fernandina, where they will also handle fire-brick, lime and Portland cement. The increasing depth of the Fernandina bar will enable them to coal most of the steamers now entering this port, and they will use the best Pennsylvania or Maryland steam coal.

The Fernandina Development Co. will at once commence the erection of ten cottages, and expects to follow that up with ten more. This company is making great efforts to advance the interests of Fernandina, and offers free water-fronts and sites to manufacturers and other investors to locate here. Their efforts induced the Southern Fuel & Supply Co. to make their headquarters here, and a new machinery factory has also made arrangements to locate at Fernandina. The Fernandina Development Co. owns most of the vacant lots and best unimproved city property and nearly all the lands adjacent to Fernandina.

The Florida Central & Peninsular car shops are now running to their full capacity getting out equipment for the new South Bound extension. The main shops of the entire Florida Central & Peninsular Railway, South Bound and Savannah extension, will be at Fernandina, and all the general repairs will be done here. The shops comprise a large roundhouse and ten other large houses, most of them being comparatively new, having been erected within the past two years. It is expected that the new extension to the South Bound Railway will require several additions. Between 200 and 300 men are employed at these shops.

The Florida Central & Peninsular Railroad Co. is now planning to erect a handsome depot at the foot of Centre street.

The above improvements and others contemplated make the business outlook for Fernandina very bright indeed.

A. P. ADAMS.

THE annual meeting of the stockholders of the Winnsboro Granite Co., of Winnsboro, S. C., was held last week at Charleston, S. C. The following board of directors were elected to serve during the ensuing year: Messrs. George A. Wagener, H. E. Young, S. V. Stewart, B. F. McCabe, R. Siegling, H. T. McGee and James F. Redding. At a subsequent meeting held by the board of directors Capt. James F. Redding was elected president, and Mr. L. C. Ferrall, secretary and treasurer of the company. All of the officers elected were those who had controlled the operations of the company in the past. It was stated at the meeting that the company was in a most prosperous condition, and the stockholders were well pleased with the showing which was presented.

GENERAL NOTES.

Brief Mention of Various Matters of Current Interest.

THE Riverside furnace at Wheeling, W. Va., will go into blast at once, orders having been given to that effect to Manager Crockard.

DURING the month of October eighty-one building permits were issued in San Antonio, Texas, the value of which amounted to \$16,390.

THE Pittsburg (Texas) Immigration and Improvement Association has been organized. Its object is to secure immigration and to develop the town and surrounding country.

MESSRS. L. CONNELLY & Co., fruit factors, of Liverpool, in their circular of October 21 state that their sales for the week were 1400 boxes of Florida oranges. The prices for lots shipped by the Germanic and Umbria from New York were as follows: Brights, eleven to fourteen shillings; a few russets at nine to twelve shillings, the gross average being Germanic, brights, twelve shillings; Umbria, brights, twelve shillings six pence; russets, nine shillings nine pence. The arrival of the Majestic with 1400 boxes was reported, which were being landed and would be placed directly on the market.

DURING the month of October seventy-three steamships and five sailing vessels were entered at the custom-house in New Orleans from foreign ports and twenty-two steamships and six sailing vessels from coastwise ports, making a total of ninety-five steamships and eleven sailing vessels. During the same period seventy-six steamships and four sailing vessels cleared for foreign ports and twenty-four steamships and four sailing vessels for coastwise ports, making a total of 100 steamships and eight sailing vessels, the total number of entrances and clearances for the month being 195 steamships and nineteen sailing vessels.

DURING the month of October the entrances and clearances of vessels at the port of Fernandina were as follows: Entered, coastwise twelve, foreign two—total fourteen; cleared, coastwise nine, foreign twelve—total twenty-one; total entered and cleared thirty-five. Coastwise tonnage 10,847 tons, foreign 21,058—total 31,905 tons. Among the imports were 3294 tons railroad iron and 900 tons fertilizers. The shipments of lumber amounted to 3,559,724 feet, of which 494,088 feet went to foreign ports. In addition to this 55,000 cypress shingles were also among the foreign shipments. The phosphate shipped amounted to 17,832 tons, all foreign, valued at \$178,350.

THE report of the commissioner of internal revenue shows a large increase in the output of sugar made in the United States from beets and sorghum. The total acreage for the past year was 24,703 acres, and the output was 57,200,000 pounds of sugar, exclusive of that manufactured from cane in Louisiana and vicinity. California raised more sugar from beets than any other State and her increase of output for the year was the largest. There were 15,993 acres planted in California and 43,500,000 pounds of sugar made; Nebraska is down for 7,000,000 pounds of beet sugar made on 4900 acres; Kansas raised about 1,800,000 pounds of sorghum sugar on 3953 acres; Utah raised 6,000,000 pounds of beet sugar on 3500 acres, and Virginia 700,000 pounds of beet sugar on 400 acres.

THE collector of customs of the port of Jacksonville, Fla., reports the business at the custom-house for the month of October, 1893, as follows: Exports were 5,510,862 feet lumber, 23,300 bunches shingles, 19,500 packages fruit, 5600 packages mer-

chandise, 300 bales tobacco, 14,250 cross-ties, 700,000 shingles, 300 bales cotton and 887,710 pounds kaolin. The foreign exports for the month were 541,035 feet lumber, valued at \$6067. The imports were 3890 barrels flour, 3070 barrels sugar, 960 boxes bacon, 22,711 packages merchandise, 4350 bales hay, 2023 bags fertilizer, 300 tons fertilizer, 2813 barrels oil, 1000 barrels fertilizer, 1007 bundles paper, 386 tons coal, 715 tons stone, 800 packages dry goods, 300 packages groceries, 300 packages hardware, 1116 tons railroad iron, 500 kegs nails and 6500 cases canned goods. The foreign imports for the month consisted of 6054 pounds tobacco valued at \$4,664.48 and a lot of merchandise valued at \$742.15.

Southern Real Estate Matters.

M. V. RICHARDS, land and immigration agent of the Baltimore & Ohio Railroad, has been elected vice-president for Maryland of the National Real Estate Association.

JUDGE BROOKE, of Norfolk, Va., has chartered the "Columbian Co. of Lambert's Point." The purpose of this company is to purchase, hold, build upon and otherwise improve, sell and convey real estate in Virginia, the amount to be held at one time not to exceed 500 acres. The capital stock is not to be less than \$25,000 and not more than \$50,000 in shares of \$50.00 each. The company is empowered to build warehouses, factories, wharves, docks and bridges, and to operate, sell or lease the same and establish such industries as may be necessary to develop its property. The officers of the company are E. J. Acker, president; W. T. Brooke, vice-president; George W. Day, secretary and treasurer; the above and N. C. Pamplin and R. F. Lawler constitute the board of directors.

REGARDING the real estate situation in Houston, Texas, the *Post* has the following: "The real estate market is now, as it has been for some time, very quiet, but there is a movement which seems to be on all the time, the transactions footing up a good round sum each week. No large deals have been reported for weeks, but the little ones are numerous at fair prices. There is no bear side to the real estate transactions in Houston, values here being firmly fixed and no one being in condition, apparently, to make any sacrifice necessary. Indeed, first-class property was never held more stiffly, and if the price fixed cannot be obtained there are no sales. The transfers for the week just closed, November 4, foot up \$57,982, or nearly \$10,000 per day. In building there is a good deal going on, mostly small houses, but some good business buildings are either under way or will be commenced shortly.

An Ohio River Scheme.

THE improvements in the Kanawha river, which have enabled coal operators to greatly increase their river trade on account of the deepening of the river, have excited much interest among Pittsburg coal operators, who fear that the former will secure most of their business. So much delay is caused by low water at Pittsburg that boats are often held for weeks, while the Kanawha people have a monopoly of the market. A Pittsburg dispatch states that Senator Quay is interested in a scheme increasing the depth of water in the Ohio so as to render it navigable at Pittsburg at all times of the year. In brief, the plan is to build dams and form storage reservoirs on tributaries of the Ohio by which large quantities of water can be held, to be released in times when the river reaches low-water stage. It is understood that Congress will be asked for a \$10,000 appropriation with which to make surveys for this purpose.

OPINIONS OF THE DAY.

What Various Authorities Think of the Business Situation.

Financial Chronicle: "The financial situation abroad seems to be somewhat unsettled in consequence of the embarrassments of Italy and the fear that Austro-Hungary will not be able to carry out the plans for the establishment of her currency upon a gold basis after having at so great cost accumulated the metal in the treasury. The gold premium in Italy is advancing. This strained financial situation in Italy directly affects Germany and France, where Italian securities are largely held and it also indirectly influences affairs in London, for the reason that any disturbance on the Continent will be certain to be reflected at the British capital."

Bradstreet's: "It is significant that the tenor of opinion in European financial circles throughout the whole of the recent depression was mainly one of confidence that the unconditional repeal of the Sherman act would be the inevitable and logical outcome of the situation. A proof of this is afforded by the heavy speculative buying of American stocks during the panic by London and other foreign centres. Repeal being now an accomplished fact, it is noticeable that the current belief in the same quarter is that a large part of the foreign capital which was withdrawn from investment in the United States when the position of our currency seemed in doubt will find its way back to this country."

Hambleton & Co.: "It will be necessary when Congress assembles in regular session to formulate a plan which will give us a safe, satisfactory and well-secured currency. First, the necessities of the government must be provided for and the gold reserve must be strengthened. This can only be done, as it now appears, by the sale of bonds. Next, it must be provided for a fixed and assured supply of gold in the treasury, and this may be acquired by making customs payable in gold. Then the circulating medium must be arranged."

Landis Banking Co. (Nashville, Tenn.): "The tone and character of business for the past week have been more reassuring than for several months past, and we are impressed with the belief that the first signs of a returning confidence are seen. We do not anticipate any 'boom' in prices, but we look for a gradual improvement in trade."

Railroad Money Well Spent.

THE Kansas City, Fort Scott & Memphis, besides paying 8 per cent. dividend on its preferred stock for the year ending June 30, 1892, and increasing its surplus to nearly \$400,000, has been rebuilding much of its line between Kansas City and Memphis. With the close of the present month the work will be practically completed, and the permanent roadway is now, beyond doubt, in condition to compare favorably with the best lines in the country. The ditching and embankments have all been brought to exact standard, as laid before contractors and foremen by means of illustrated plans and instructions; the ballast is fifteen inches of broken stone, beveled from the ends of the ties, and the new steel rail is seventy-five pounds to the yard. Six new 100-ton 10-wheel passenger locomotives have been ordered for use on the Ozark Mountain division, and indications point to careful preparations to shorten materially the passenger and mail time schedules between Kansas City and the Southeast.

A NEW Sunday paper, entitled the *Sunday Morning Sun* has been started in Birmingham, Ala., by Messrs. Aubrey Harwell and J. C. Abernathy.

W. C. POWELL has been elected vice-president, and A. B. Moore and Walter Coney added to the directory of the Savannah Board of Trade.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department, on page 260.]

The Ramie Industry in France.

[A report to the Department of State by Charles W. Wiley, Jr., consul at St. Etienne.]

At the present day, although both soil and climate are friendly to its production, ramie is practically uncultivated in France.

Some years ago, when the vineyards were ravished by the phylloxera and before the American vine was introduced, cultivators in some of the districts of the south of France replaced the vine stocks by those of ramie, in order to utilize the ground. As soon, however, as it was discovered that the American vine was invulnerable to the attacks of the phylloxera they abandoned the experiment of raising the ramie, and since have refused to devote any portion of their fields to its culture, for the very practical reason that the cultivation of the vine is much more profitable.

Ramie, called in England "China grass" and in China "Ting-ma," or hemp of the valley, is, as is well known, a perennial plant whose fibre is like that of hemp, but much superior to it in solidity, resistance, length and delicacy. The analogy of the ramie with the indigenous nettle of Europe—genus *Urtica*—was discovered at the beginning of the present century, but it was not until a comparatively recent period found that the textile nettle belonged to two distinct species—the *Urtica utilis* or *Urtica tenacissima* and the *Urtica nivea*. The *Urtica utilis* is a tropical plant, while the *Urtica nivea* is grown in temperate climates. It is with the latter that attempts at cultivation have been made from time to time in France.

The failure to render its production a permanent industry did not result from the difficulty of its cultivation—both soil and climate giving it a generous welcome—but from the want of success in discovering an economical method of decortication. A process by which the fibres of the ramie could be detached from the stalks at an outlay sufficiently small to insure a reasonable profit to the manufacturer has been the problem which has taxed for many years the ingenuity of French inventors. That this problem has never been completely solved is generally conceded; but it is hoped and believed by many that the process discovered by M. Favier, to which allusion will hereafter be made, has done much to utilize the fibres of the ramie in the manufacture of numerous textile fabrics.

As soon as interest was thoroughly aroused upon this subject it became plain that the primitive method adopted in China, that of decortication by hand, was only rendered available by reason of the cheap labor of that country, and that it would be obviously impracticable in France. Again, it was found that retting, the process employed for flax, was not applicable to ramie, a plant whose stems of irregular thickness do not reach maturity simultaneously and whose fibres are embedded in a glutinous matter greatly in excess of that of flax or hemp.

The process employed for flax having been found to be inapplicable to ramie, the idea was conceived of resorting to machines similar to those which for several years have been used in the decortication of hemp when not submitted to the retting process. This method, due to MM. Leoni and Coblenz, was only applicable when the ramie stalks were absolutely dry. For more than twenty years efforts have been made to construct a machine for the decortication of the stems in the fresh or green state. It would be unprofitable to attempt a detailed description of these various machines, for not only have their merits and demerits been fully discussed at the ses-

sions of scientific associations and in the reports of committees of award of national and international expositions, but in no single instance can it be claimed that the genius of the inventor has produced a machine completely adequate to the decortication and degommage of the ramie stem.

Ever since 1844, when a surgeon—M. Leclancher—attached to the French man-of-war *La Favorite* forwarded to the Museum of Natural History, at Paris, specimens which he had gathered near the mouth of the Yangtze, there has been a dream, more or less fitful, that ramie might in time compete with cotton in the manufacture of textile fabrics. During the civil war in the United States the cotton famine in England and the scarcity of cotton in France occasioned by the blockade of the Southern ports revived the interest in this subject which had begun to wane, and the chambers of commerce at Lille and Rouen drew attention to the resources which China grass presented. On the 20th of July, 1870, the French government appointed a committee to examine and report on the subject, but the excitement of the Franco-German war soon interrupted any serious consideration of the matter.

Today the dream of ramie as a substitute for, or even as a formidable competitor with, cotton is hardly indulged in by its most sanguine advocates, but for some time interest in the subject has been quickened, although the work goes on in soberer and more practical channels.

A French society was formed some years ago to develop the cultivation of ramie in Spain and Egypt, two countries affording most favorable conditions of soil and climate. The Spanish proprietors willingly consented to the experiment, but being absolutely without the necessary means, they had to draw largely from the treasury of the society, and at last, growing discouraged, the experiment was abandoned. In Egypt success was not greater. Although the plant took kindly to its new home, the cost of irrigation became very onerous, and in addition to this the director appointed by the society betrayed the confidence reposed in him. The result was that in a short time the society had to go into liquidation after having lost 4,500,000 francs.

In the meantime a manufactory for the spinning of ramie thread and converting it into tissues, such as sailcloth, table linen, curtains, etc., was organized at Avignon, in the department of the Vaucluse, under the name of A. P. Favier et Cie. The creditors of the society in liquidation, believing that the ramie industry would succeed in the end, abandoned to a new board of directors the factory for a certain number of years, rent free, on the condition that a large portion of the dividends should be appropriated to the extinction of the debt, which amounted to 600,000 francs. Already there is every hope of success, thanks to the energy of the head of the company, M. Favier.

Abandoning all idea of establishing plantations in Europe, the new company imports the raw material direct from China, where it has already passed through the first and somewhat incomplete operation of decortication. On its arrival at the factory it is passed a second time through a decortivating machine, of which M. Favier is the inventor, and finally relieved of all the glutinous matter by a chemical process, of which M. Favier keeps the secret, but which is supposed to consist of a weak alkaline solution in which the fibres are boiled. It is then spun into thread, when it is ready for manufacturing the articles already mentioned.

The factory employs at present about 200 hands, men and women, and the business done represents about 1,000,000 francs (\$190,000) yearly.

Manufactured ramie is a little dearer than cotton or linen goods, but its durability is said to be threefold that of the latter.

It is claimed that it will always preserve the original gloss.

The factory—the only one, I believe, in France at present—does not intend, however, to continue the manufacture of tissues; it will confine its business to spinning, so as to furnish the large weaving industries with the first material, or thread.

The actual price of the thread ranges from four to twelve francs per kilogram (about thirty-seven cents to \$1.10 per pound), but the company asserts that as soon as the cultivation of ramie becomes developed in other countries (the South American especially) these prices will be much lowered.

Besides this branch of the industry, the company manufactures ramie pulp for the making of paper of all kinds, but especially for that intended for the bills of the Bank of France. This bank has made a contract with the company by which the latter is obliged to keep in stock for the bank 20,000 kilograms of pulp in one of the bank's large storerooms at Marseilles and to have on hand 20,000 kilograms more, while the bank itself has always on hand a similar amount in its paper manufactory near Paris, making in all 60,000 kilograms at all times available. The price of the pulp is six francs per kilogram (about fifty-five cents per pound), and it is said that the notes made with this material are not only stronger than others, but that they defy imitation.

The company is at present in negotiation with the Russian government on the same subject, and already that government has asked for a few thousand kilograms on trial.

The dividend paid by the company last year was 6½ per cent., and this year it is predicted that a somewhat higher dividend will be declared.

An Important Loom Consolidation.

Textile manufacturers will be interested to learn that after long negotiations the Knowles Loom Works has purchased the entire business of the George W. Stafford Manufacturing Co., of Providence, R. I., and will remove it to Worcester, Mass., as soon as arrangements can be completed by the erection of the necessary buildings in connection with its large plant recently completed on Grand and Tainter streets in that city.

The Knowles Loom Works has had an almost phenomenal growth since its removal to Worcester, and the George W. Stafford Manufacturing Co. has also been very successful, and the union of the two concerns will without doubt place the Knowles Loom Works at the head of the manufacturers of textile machinery of the United States in every department, and with its connection with Messrs. Hutchinson, Hollingworth & Co., its agents for the construction of the Knowles loom in England, the largest in the world.

The George W. Stafford Manufacturing Co. has made a specialty of jacquards and dobbies, and has the best in the market in that line, and has also built large numbers of narrow looms for plain goods, and the Knowles Loom Works will continue the manufacture of jacquard and dobby looms, or the machines separate from the looms, under the personal supervision of Mr. George W. Stafford, who will be associated with the Knowles Loom Works under the new arrangement.

A New Knitting Mill.

A movement is being pushed at Brunswick, Md., on the Baltimore & Ohio Railroad, for the establishment of a knitting mill for the manufacture of hosiery and underwear. The project proposes to form a \$10,000 stock company and to purchase the plant of Leaf Bros., now located at Bristol, Pa. The Messrs. Leaf are to take their payment in stock of the new

company and undertake the entire management of the mill and business. Mr. M. V. Richards, of the land and immigration department of the Baltimore & Ohio Railroad Co., is deeply interested in this project, and, in company with Mayor Z. T. Brantner and Councilmen J. T. Martin and E. C. Shafer, have visited Bristol to examine the Leaf plant, and have made a most favorable report.

Southern Textile Notes.

THE affairs of the Nashville Cotton Mills at Nashville, Tenn., will likely undergo a complete reorganization in the near future, an effort to that effect being now on foot. A number of the stockholders met last week and authorized Mr. G. M. Fogg to submit plans for the issuance of second mortgage bonds and additional stock amounting to \$50,000. The directors have sanctioned the plan and the secretary will send a circular immediately to all the stockholders, laying the plan before them.

MESSRS. W. J. DICKEY & SONS, proprietors of the Oella Mills, Oella, Md., have decided upon extensive improvements to their plant. Work on the foundation for an enlargement of their storage warehouse has already commenced. The upper mill is having a number of annexes built for it to afford room for the accommodation of an equipment of new additional machinery for the manufacture of new patterns of goods. The present plant is now running on full time, employing about 300 hands. The equipment includes 10,000 spindles and 278 looms.

THE Portsmouth Cotton Manufacturing Co., of Portsmouth, Va., has let contract to the Charlotte (N. C.) Machine Co. for the designing of its new mill. The plant is to be a standard New England cotton factory in all respects, equipped with the latest and most improved machinery for the manufacture of fine goods. Mr. T. W. Whisnant is president of the company, and J. A. Mulvey, secretary.

THE directors of the proposed Statesville Cotton Mills met in Statesville, N. C., on the 4th inst. and directed the engineer to contract at once for the machinery necessary to properly equip the mill. An outfit of 2500 spindles and seventy-five looms will be arranged for at once, so that the plant can be in operation by early spring. William Wallace is president, and T. D. Miller, treasurer, of the company.

THE Big Falls Cotton Mill at Big Falls, in Alamance county, N. C., was sold by order of the court on October 31. Mr. J. A. Long, one of the receivers of the company, cried the sale and succeeded in disposing of the plant to Mr. Leroy Springs, of Charlotte, one of the largest creditors. The sum bid was \$52,000. The superior court will pass upon the sale at an early date.

THE enlargements and new machinery installation for the Coosa Manufacturing Co.'s plant at Piedmont, Ala., are nearly completed and operations will shortly be commenced.

THE new cotton factory at Mooresville, N. C., will shortly be put in operation.

A Thriving West Virginia Town.

Bluefield, W. Va., is enjoying a rapid but healthy growth. The natural advantages of the town and vicinity have attracted many newcomers and greatly stimulated building and other enterprises. Among the improvements are four business blocks either being erected or planned, and about twenty handsome residences, several of which cost \$10,000 each. Besides these, several industrial enterprises are being enlarged. It is estimated that the sum of \$200,000 will be spent in buildings between April 1, 1893, and April 1, 1894, in Bluefield.

MECHANICAL.

Babcock & Wilcox Boilers at the Fair.

During the last few weeks of the fair the following notice was placed on the front of the Babcock & Wilcox boilers that were in use there:

"These boilers have received no award. Why? Read! Learn! We were informed that it was the purpose of the jury to make awards on boilers based entirely upon the written statements of the exhibitors of boilers without tests or any personal knowledge in the possession of said jury concerning the comparative construction, operation, economy or durability of said boilers.

"We were asked to make such a statement, and were informed that all other exhibitors of boilers had been requested to make a like statement of their claims for the consideration of the jury of awards.

"Believing that an award based on such insufficient knowledge on the part of said jury could be of no practical value, and notwithstanding the expense incurred by this company in making an exhibit, we respectfully declined to make any such written statement for the purpose of receiving an award upon our boilers.

"While we do not in the least envy those who have, upon such knowledge by the jury, been awarded premiums, we are equally content to stand upon the record without an award based on such a knowledge of our goods."

The New Feed Springfield Gas Machine

We show an illustration of the Springfield gas machine, manufactured by the Gilbert & Barker Manufacturing Co., New York city, which was invented in 1868. It was the first machine in which the air pump was located in the cellar of the building and the generator in the ground outside. This valuable feature, with many others, was patented.

The Springfield mixing regulator was patented in 1880. It was no doubt an important invention made in the gas-machine field, and was a device to regulate automatically both the quality and pressure of air gas.

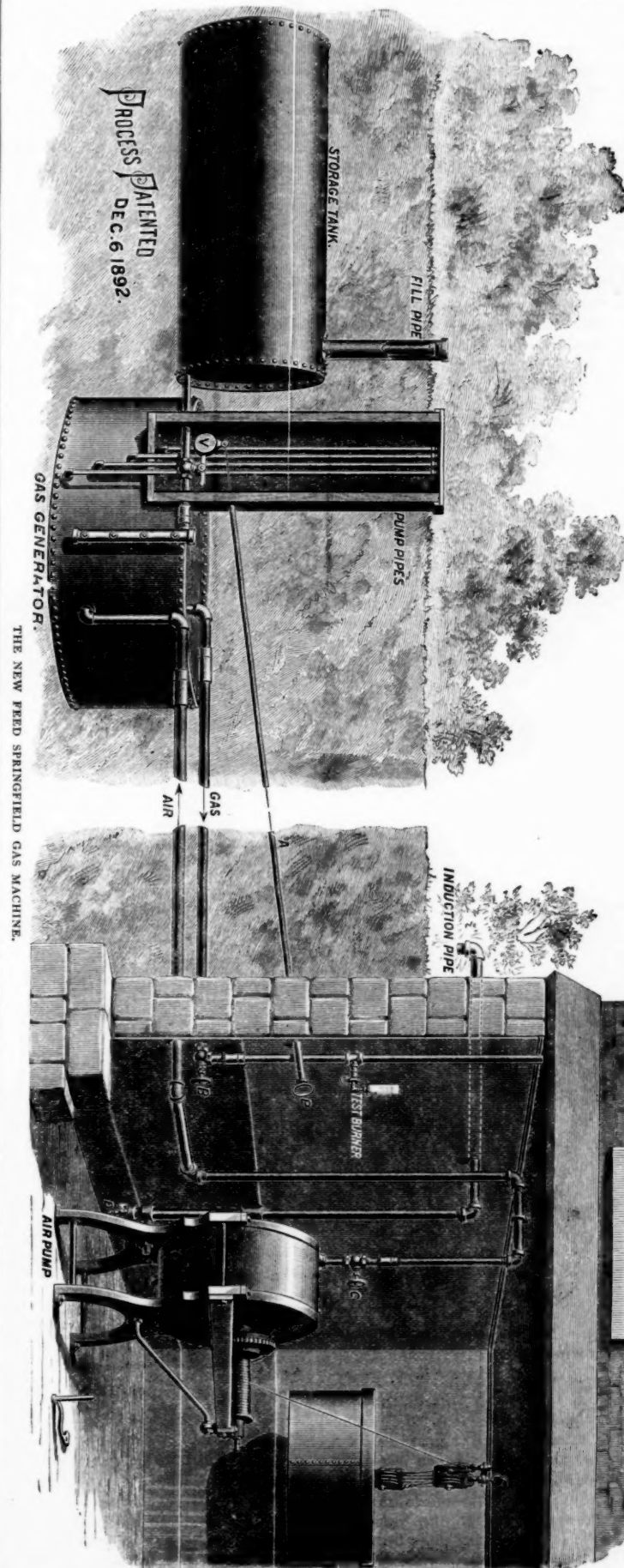
The new feed Springfield gas machine illustrated here is the result of the experience and observation of a quarter of a century. Having been in operation now more than a year, including two winters, one of exceptional severity, 100 of them being now in use in all parts of the country, it is now offered with the greatest confidence. Instead of making a gas of eighty candle-power and then diluting it to the more practicable twenty candle-power, this machine makes the gas of the latter desirable quality once for all in the gas generator itself, and so avoids the need of dilution by the more or less complicated mechanical devices inside the house.

It is made of the best material and workmanship, and it is claimed that it will last a lifetime. It is known that gasoline of a gravity of 80° Beaume will at a temperature of 40° mingle with air in a nearly uniform proportion of fifteen parts of vapor to eighty-five parts of air. This mixture is an illuminating gas of practically uniform quality of twenty candle-power which may be burned through plain lava-tipped burners, consuming four cubic feet of gas per hour with perfect combustion, absolutely free from smoke or odor. It is used through all the usual coal-gas fixtures, including candelabra and Welch incandescent burners; also in stoves and ranges for heating rooms and for cooking and laundry work, and for heating soldering irons, for melting, canning, small forging, brazing, driving gas engines, caloric pumping engines and in the mechanical arts generally. For all of these purposes it is extremely economical, costing only seventy-five cents per thousand cubic feet, which is less than

half the average cost of gas made in public gas works.

Since the temperature five feet underground varies but little from 40° of temperature, it may be considered that element of the problem as constant. The generator is charged, as shown in the illustration,

time to time into the generator such a supply as is needed to raise the gravity of the whole mass to about 80° Beaume. This result is readily effected from the fact that all the hydrocarbons have a strong affinity for each other, their particles existing in a state of mutual repellancy. This operation



with a hydrocarbon of gravity so low that it will not evaporate under the temperature given. This is a permanent absorbent. Filling the storage tank with commercial gasoline, opening the throttle V by means of the pull P, located in the house, there can be drawn from the storage tank from

requires but a few moments per week. The supply of fresh gasoline, therefore, is promptly diffused through the whole body of permanent liquid absorbent, whence its particles are given off slowly and evenly, as needed to produce an approximately uniform result.

This valuable and novel process or method is patented. It is applicable to Springfield gas machines of earlier construction, to which it can be added at small expense.

The Gilbert & Barker Manufacturing Co., of 90 John street, New York city, publishes a number of catalogues descriptive of its machine, and also a book of letters from customers who are now using this gas machine, who write that it will do all it has claimed for it.

The Venturi Meter.

A pamphlet issued by the Builders' Iron Foundry, Providence, R. I., illustrates and describes the Venturi meter for liquids manufactured by that concern and patented by Clemens Herschel. This meter is an exceedingly simple and effective instrument or method of gaging the flow of liquids which derives its name from the Italian philosopher Venturi, who first called attention to the relation between the velocities and pressure of liquids when flowing through converging and diverging tubes. It consists of two parts, the tube through which the water flows and the recorder which registers the quantity of water that passes through the tube. The tube is simply a gradually tapering contraction in the water main of which it forms a part, beyond which it again expands to the normal size.

The action of the tube is based on that property of the Venturi adjutage which causes the small section of a gently expanding frustum of a cone to receive without material resultant loss of head as much water at the smallest diameter as is discharged at the large end, and on that further property which causes the pressure of the water flowing through the throat to be less, by virtue of its greater velocity, than the pressure at the up-stream end of the tube, each pressure being at the same time a function of the velocity at that point and of the hydrostatic pressure which would obtain were the water motionless within the pipe. Usually the pipe is made of cast iron, with a bronze throat-piece or a bronze lining in the throat.

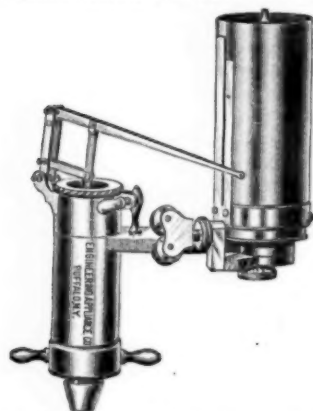
The recorder is connected with the tube by pressure pipes which lead to it from the chambers surrounding the up-stream end and the throat of the pipe. It records the flow of water so that readings may be obtained in the ordinary way, and is no more complicated and is as durable as an eight-day clock.

There is nothing about this meter to retard the flow of water or diminish its pressure. The tube is practically a part of the pipe line, and is not injuriously affected by water-hammer or the most violent fluctuations of velocity or pressure. It can be buried with the pipe line, and requires no more care than the pipe line itself. The meter cannot be disarranged by fish, gravel or other substances carried through the pipe by water. There is no limit to the size of the meters nor the quantity of water that may be measured. Meters with 24-inch, 36-inch, 48-inch and even 20-foot tubes can be readily made and set with no more difficulty than ordinary pipe.

The "Perfection" Engine Indicator.

We show in the accompanying illustration the "Perfection" steam-engine indicator manufactured by the Engineering Appliance Co., Jamestown, N. Y. It is a full-size standard instrument with a piston of a-half inch area provided with water grooves. The parallel motion is made of tool steel and the construction is a very desirable one. The levers, forming a rectangle with the pencil, top joint in piston rod and lower trunnion bearing in a straight line, the result is a perfect parallel motion. The piston rod, serving as a guide and moving as it does in a straight line, insures the pencil point tracing a perfectly straight line throughout its entire

range. The multiplication of piston movements is one to five, and is constant for all positions. Any error due to lost motion in the joints is not aggravated by the different positions assumed. There are no sliding or rolling surfaces to create friction or be affected by friction of pencil against paper drum revolving in opposite directions. It will be seen that there are no abrupt angles to the guiding levers, while those parts which have the greater weight have but a slight vibratory movement of their centre of gravity, which is the true measure of the comparative lightness of these parts. The little arbors which carry the steel levers are milled from steel, hardened and blued;



THE "PERFECTION" ENGINE INDICATOR.

the ends of these are drilled and countersunk at an angle of 60° to turn on hardened adjustable pivot screws pointed to a corresponding angle. The steel arms, as well as the pivot screws, are held in position by hexagon nuts one-eighth of an inch across, which are as perfect as any large finished nut. This makes a joint that will stand hard wear, has very little friction and is capable of the finest adjustment, a point that finds favor with the user.

The connection between the pencil movement and the piston rod consists of a steel swivel head provided with a fine thread, by means of which the height of the atmospheric line can be adjusted to

by means of the double swivel wheels.

The rosewood handle that swings the pencil movement can be screwed in or against the stop post so as to get the required pressure of the lead upon the paper. The springs used in the "Perfection" indicator are simple, single coil springs with a very light head on the moving end. They are screwed on the cylinder head and piston direct, without wrenches, thumb nuts or adjustable joints.

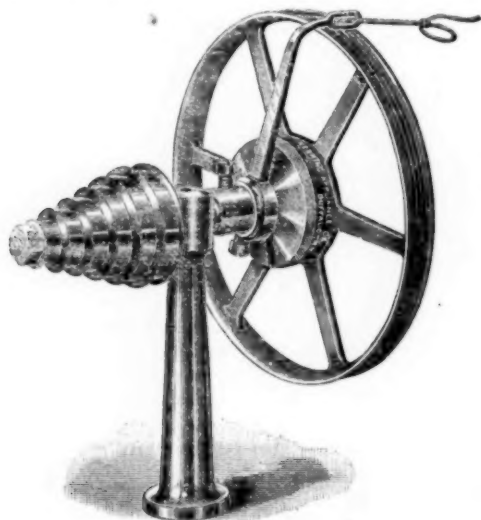
To make a right or left-hand instrument it is simply necessary to turn the paper drum from one notch to another and screw the rosewood handle in from the other side. There are seven three-thirty-seconds-inch relief holes at the back of the arm to allow the piston to rise and fall without creating a pressure at the top.

The workmanship throughout is the very finest that can be produced. The cylinders are brought to within one-hundredth of an inch of their permanent size. The outside is then removed, and the liability to change the set of the metal is brought about before the final reaming is done. The cylinders are then brought to three-ten-thousandths of an inch of their true size, and the final diameter is secured by a peculiar process which leaves a surface like glass.

The diameter of the piston is .7078 of an inch; the top of paper cylinders is four inches above the carrying arm; the diameter of the paper cylinder is one and three-quarters inches; the dimensions of the paper six inches by three and a-half inches; the multiplication of the piston movement is one to five; the range of the parallel motion is four inches. In this connection we also show an aluminum reducing wheel made by the same concern which is light, cheap and in every way desirable.

The Triumph Boiler Cleaner.

The accompanying illustrations show the boiler-cleaning device manufactured by the Triumph Boiler Cleaner Co., 63 South Canal street, Chicago. This cleaner involves several new features peculiar to this device. The first of these is the general form of the cleaner, by which the water is



ALUMINUM REDUCING WHEEL.

different heights to suit weak or strong vacuum springs. The paper drums are turned thin from special drawn telescopic tubing, with ring at bottom and closed top. The barrel which carries the drum revolves on adjustable cone bearings and rotates very smoothly; the return motion being accomplished by a special flat coil spring of the clock pattern. This spring is held in position by a knurled head on the square end of the drum arbor. To adjust the tension of the spring it is only necessary to lift and turn to any one of the quarter positions without unscrewing thumb nuts of any description. The drum cord will not climb from one coil to another and is capable of adjustment to any angle

returned to the boiler perfectly clean. The accompanying cuts show the external (Fig. 1) and sectional (Fig. 2) views of the cleaner and the skimmer in place in the boiler (Fig. 3).

The impurities of the water as they begin to precipitate rise to the surface; the cleaner and connecting pipes become full of water, and the water at the surface in the boiler being hotter than that at the bottom, is more expanded and therefore lighter, and tends to rise through the skimmer and flow to the cleaner (the cooler water coming from the cleaner and flowing down to the return pipe to take its place), carrying the impurities with it. It flows rapidly through the feed-pipe, giving the

impurities no time to settle here, and therefore always keeping the feed-pipe clean and unobstructed.

When the impurities reach the settling column of the cleaner the speed of the water becomes very slow on account of the large increase of area. The impurities now have ample time to settle, and, as there is no agitation of the water, they fall to the lower part of the columns into the collecting chamber. As the water passes up through the return columns it has ample time to give up any of the lighter impurities which it may still retain, and by the

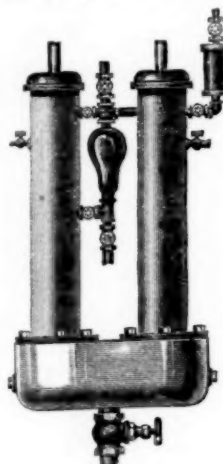


FIG. 1.

time it reaches the top of the return column is as pure as though it had been distilled.

In the cut a common form of skimmer is shown, but in practice a combined skimmer and deflecting plate is used. The deflecting plates not only keep the steam from entering the skimmer and thereby stopping the circulation, but are also an absolute preventer of wet steam, thereby doing away with collectors.

The directions for the use of this cleaner are as follows: All valves must be kept closed until the boiler is under steam pressure. Open try-cock b and open valve A partially until water and steam are discharged from try-cock b, after which try-cock b must be closed. Open valve A

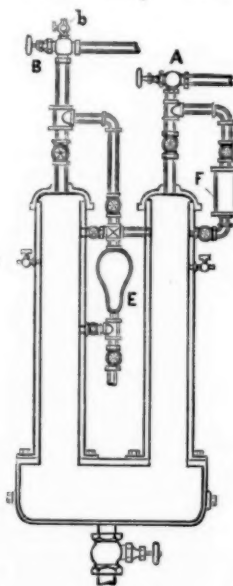


FIG. 2.

wide and then open valve B wide. With these valves open circulation starts at once and the cleaner will perform its work perfectly. After two or three hours open the blow-off valve in the bottom of the collecting chamber, and, if water and steam comes out, it shows that the circulation is complete and in operation. When auxiliary chambers E and F are attached they perform a very important part in the working of the cleaner where artesian water is used, and where a more rapid precipitation is required.

The chamber E is used at the discretion

of the engineer in case it is desired once a week, or less frequently, to inject into the boiler any compound. The compound can be fed through this chamber as rapidly as desired through the valves shown in the

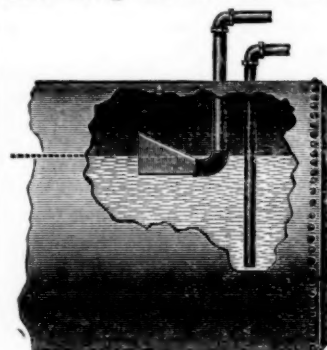


FIG. 3.

cut. The chamber F is used to inject into the precipitating chamber a compound which will cause a more rapid precipitation in the collecting chamber. This is used also at the discretion of the engineer, and with ordinary water can be dispensed with.

Baling Cotton for Export.

Consul C. W. Chancellor, at Havre, France, makes the following suggestions about baling cotton for export:

"In connection with the subject of packing American products, I would especially call the attention of planters and factors to the superiority of Indian and Egyptian cotton baling as compared with American baling, and also to the bad practice which is occasionally noticed and greatly to be deprecated, of mixing good and bad cotton in the same bale.

"The Indian cotton is pressed into small, compact bales, securely covered with jute and wrapped continuously, as it were, with iron bands; whereas much of the American cotton arrives here in very bad condition—the iron bands broken and the bagging torn or otherwise mutilated and often rotten from exposure to the elements or from having lain in the water, which causes the weight of the cotton to be fictitiously increased, single bales sometimes weighing 800 pounds. Cotton thus saturated with water and increased in weight is necessarily greatly depreciated in value.

"The want of proper attention in the baling of cotton and on the part of the commission merchant in suffering the bales to get wet, thereby increasing the freight on a damaged article, cannot fail to injure the market for American cotton, which will ultimately be seriously felt by planters and dealers at home. It is to the interest of all concerned that this matter should be remedied at once.

"The careful planter who pays due attention to the baling, as well as the quality, of his cotton will in the end be properly remunerated, but the slovenly planter who mixes good and bad together and who does not attend properly to the packing, baling and shipping of his cotton will only be able to sell in seasons of scarcity and at greatly reduced prices.

"The utmost pains is taken in the packing of Indian and Egyptian cotton shipped to Europe. Compressing is done by steam compressors, and the bales, which are so securely covered with jute as to be almost impervious to the elements, are fastened with at least two iron bands or ties more than are used on the American bales. On an average four bales (say 1568 pounds net) of Indian cotton go to a space ton of forty cubic feet, some presses making even 100 bales equal to twenty-one tons measurement. The Egyptian bales are somewhat larger than the Indian, but are equally well wrapped with jute and bound with iron bands. It is not believed, however, that jute as a covering for bales possesses any special excellence of character, except as to strength and cheapness."

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department, on page 260.]

Lumber Directory.

Readers of the MANUFACTURERS' RECORD who may be in the market for lumber of any description are recommended to the directory of Southern lumber manufacturers and dealers which appears among the advertising pages.

A Folding Sawing Machine.

We invite the attention of our readers to the accompanying illustration and description of a folding sawing machine manufactured by the Folding Sawing Machine Co., 241 South Jefferson street, Chicago. This machine is of particular utility to farmers and those who do not have enough timber to fell or cut to warrant the use of a steam mill. The illustrations show clearly the construction and operation of these machines, both in cutting up logs and in felling trees. These machines are light, weighing in the neighborhood of forty pounds, and they fold up like a pocket

machinery, namely, lack of metal in frames, Babbitt boxes, inferior designs and poor workmanship. If correct, these claims would discredit American machines, but the question arises, are they true? I certainly think that their assertions are not consistent with the facts, because we have sold and shipped large outfits of wood-working machinery to all parts of Europe, the British Isles included, and consequently either the European users of such machinery do not know a good machine from a bad one, or else these English manufacturers of woodworking machinery are deliberately misrepresenting American machinery. Our experience with English and European woodworkers has taught us that they are not so simple, but, on the contrary, they know a good machine when they see it. This is the reason why American manufacturers have so many European customers, and this also is evidently what hurts the feelings of our English competitors.

"M. Glover & Co. attach considerable importance to their having sold one machine to an American house, they having put the same in 'on its merits,' and as it

and hence I will take this matter up in detail.

"In the first place, all English manufacturers of woodworking machinery acknowledge the superiority of American machinery by copying the same. Some do it openly and admit it; others do it on the sly and disclaim it. Sager, of Halifax, and Haigh, of Oldham, acknowledged this to me when I was in England in 1889 by saying: 'We take an American machine as a copy, and by putting in a little more metal and placing the same on the market as an improved English-American machine, we can sell them.' These two manufacturers are leading houses in their line in England. Messrs. A. Ransome & Co. some years ago thought enough of American ability to hire an American designer of woodworking machinery, and a number of machines designed by this American are illustrated in their present catalogue. A short time ago one of the Ransomes came to America for ideas, and, I believe, for the special purpose of copying what he could for the purpose of rearranging his company's plant upon the American plan upon his return home.

show as heavy machines as these for the purposes intended.

"As to the high price of castings and wages: From a conversation I had with several foundrymen from England a short time ago I find that the price of castings there varies from two to eight cents per pound, which is exactly the price in Cincinnati. That wages are higher in this country I admit, but it is a well-known fact that the American mechanic does more work than the English or German mechanic in the same time. Then, the American iron is far stronger than the English, and consequently it does not require so much of it to obtain the same result.

"In regard to separate machines for special work, we only recommend combination machines for small manufacturers, so as to enable them to do a variety of work with as little outlay as possible at the outset for machinery. Where close competition, however, has to be overcome, it is necessary to have machines made to do only one class of work, so as to keep them running steadily on one kind of stock, the results of which while apparent to the

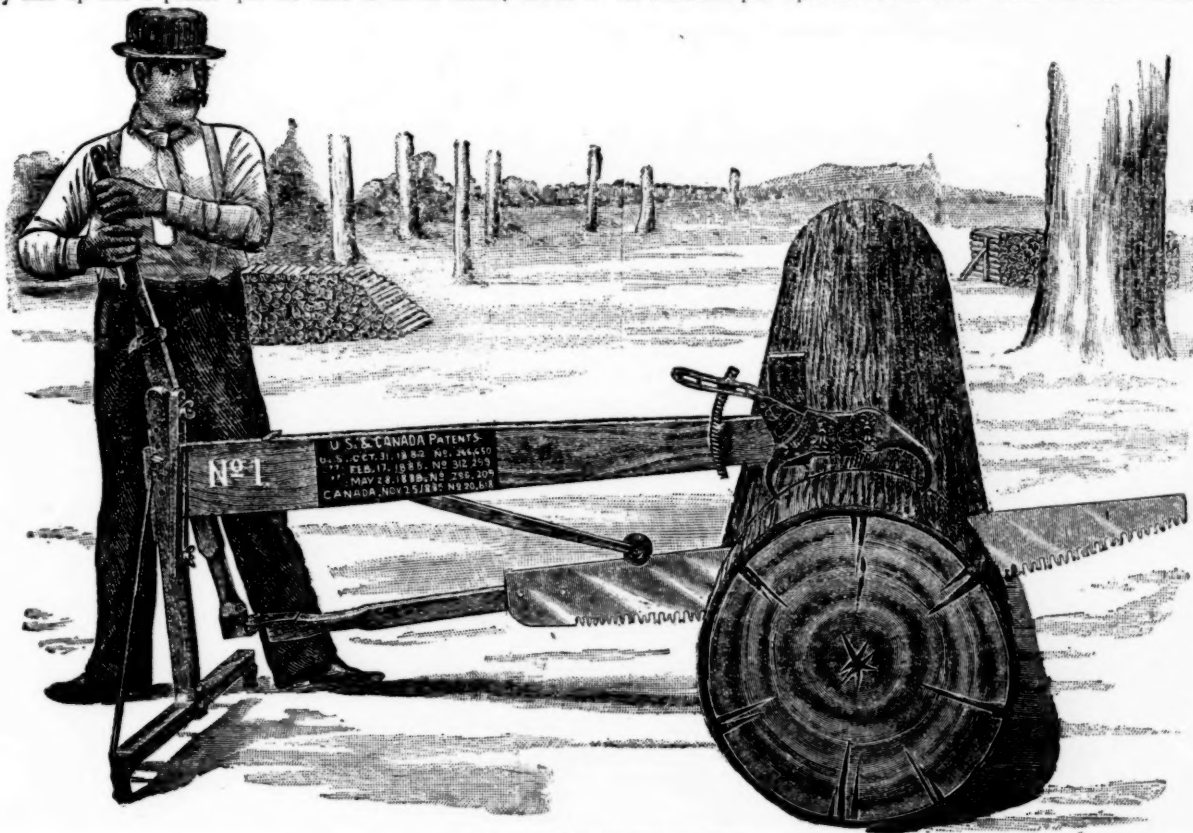


FIG. 1.—FOLDING SAWING MACHINE.

knife. One man can easily handle a machine and saw down any tree.

The machine can be adjusted almost instantly to saw on a side hill and then changed to saw the tree up into lengths after being felled. The machine has some wonderful records to its credit, which are embodied in the catalogue issued by the makers. This catalogue and other interesting printed matter will be sent to any applicant who will mention the MANUFACTURERS' RECORD.

American vs. English Woodworking Machinery.

Frederick Danner, vice-president of the J. A. Fay & Egan Co., of Cincinnati, Ohio, has written to the *American Exporter* a forcible reply to an article in the *London Ironmonger* setting forth the superiority of English over American woodworking machinery. He says:

"Messrs. M. Glover & Co., of Leeds; Messrs. F. W. Reynolds & Co. and Messrs. A. Ransome & Co., of London, who are referred to as representative British firms building woodworking machines, have been particular to mention so-called defects in the construction of American woodworking

was not returned they take it for granted that its equal is not made in the United States. It is possible that this is correct, because kindling-wood choppers are not made or even thought of by any reliable woodworking machinery manufacturer in this country. Englishmen who have called upon us and who have lately purchased our woodworking machinery tell us that Messrs. Glover & Co. are manufacturers of kindling-wood choppers and emery-grinding machines. If so their ability as expert judges may be questioned by the trade. They claim that they cannot understand why American manufacturers do not pay more attention to the construction of their machines, so as to bring them up to the English standard, and then add that foundry castings, wages and materials are higher in price in America, and so we make up the deficiency by eulogizing our goods and ideas more than English makers find it necessary to do. But at the same time they allow that Americans know better than they how to apply machinery to new purposes, and that if we can only get a variety of machines to do the work we are elated, and this they consider a weakness. I consider this ignorance on their part,

"Thomas Robinson & Co., of Rochdale, wrote to the Egan Company for plans of their power-feed sanding machines, but could not agree upon the price, and they now make a power-feed sander which is a direct copy of American machines. Now, this wholesale copying is bound to result as follows: The American manufacturer puts a new machine on the market, which is at once copied by an English or a German manufacturer, but as it takes time and practical experience to develop the weak points in any newly-designed machine, it is to be assumed that the copyist does not get the benefit of this practical experience when he copies the original, untried machine. It sometimes takes years to develop all the weaknesses, and the reason why the English manufacturer considers our machinery too light in weight is simply because he has copied discarded machinery. The question arises, are the American machines light in weight? At the present time I say 'no.' The J. A. Fay & Egan Co., make a 24-inch single cylinder thickening planer, weight 5000 pounds, and they also make a 30-inch double-cylinder machine that weighs 8000 pounds. I doubt very much if any English manufacturer can

American cannot be appreciated by Englishmen.

"In regard to Babbitt metal, this our English manufacturers take special pains to condemn, while at the same time they are using it. In 1889 I visited the London & Northwestern repair shops at Rugby, and there saw Babbitt-metal bushings fitted to the connecting rods of the locomotives. To this fact I called the attention of my friend, who, by the way, was an engineer of forty years' experience with the same company, and he replied: 'This is your Yankee Babbitt metal. It wears well, is used to put in the rods, and is liked by all our men.' Some of the users of woodworking machinery in England are beginning to realize that when Babbitt metal is used it costs less for repairs, because they can then do their own repairing.

"In conclusion, I ought to say something about balancing. While in Glasgow I visited a large furniture factory and there saw a nearly new machine, weighing about 6000 pounds, fitted with bronze boxes and built by a responsible English firm, making moldings two inches wide at the rate of 1500 hundred feet per day of ten hours. The cutterhead and countershaft pulleys

were all very much out of balance, the boxes were loose in the frame, the cutter-head mandrel was running loose in the journal and the machine vibrating badly, while the work turned out was extremely rough. An American machine for this class of work would weigh about 1200 pounds and would turn out about 10,000 feet of molding in the same time. The boxes, as we construct them, could not get loose in the frame, while less power would be consumed and the work turned out would be smooth. Another instance occurred at Keighly, Yorkshire, where I found a 24-inch planer running with the cutterhead out of balance enough to make the machine shake the whole floor on which it stood. The boxes were loose in the frames and the machine was condemned by a woodworking machinery manufacturer, although it was not an old machine by any means. The trouble was that the cutterhead was out of balance. In the south of England I visited a shop where a large manufacturer of woodworking machinery had undertaken to put up some line shafting three inches in diameter, with a pulley on same

heads in the rough and flour barrel staves and heading. This company has recently obtained an order for 40,000 oak railroad ties and is shipping 1000 per day.

LUMBER MARKET REVIEWS.

Baltimore.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, November 9.

The local lumber market has shown very little change during the past week, and the volume of business has been light. Receipts continue moderate, and the demand for certain grades and dimensions is a shade better. In North Carolina yellow pine there is a firm feeling, and manufacturers show no disposition to lower values, but on the other hand are very firm in their views. Receipts of air-dried lumber are fully ample for all immediate necessities, and prices are steady. Cypress is dull and prices easy, with the inquiry very light. In white pine there is a fair demand, and during the week several sales of round lots have been reported within the range of quotations. There is no improvement in the demand for hardwoods, and the trans-

5-4, 6-4 and 8-4.....	95 00@110 00
Newell stuff, clear of heart.....	125 00@130 00
Culls.....	30 00@ 35 00
<i>Chestnut.</i>	
Cabinet, white and red, plain-sawn and good, 1 and 2, 8 inches and up, 12 to 16 feet long, 4-4.....	35 00@ 40 00
Quartered white, 1 and 2 quality, all figured, 6 inches and up wide, 4-4.....	50 00@ 55 00
Culls.....	10 00@ 15 00
<i>Poplar.</i>	
Nos. 1 and 2, 5-8.....	22 00@ 24 00
" " 4-4.....	27 50@ 30 50
Nos. 1 and 2, 6 and 8 4.....	30 00@ 32 50
Culls.....	11 50@ 13 50
<i>SHINGLES.</i>	
Cypress, No. 1 hearts, sawed, 6x20.....	7 50@ 7 75
No. 1 saps, sawed, 6x20.....	5 50@ 6 00
No. 1 hearts, shaved, 6x20.....	6 50@ 7 00
No. 1 saps, shaved, 6x20.....	— 5 00
<i>LATHS.</i>	
White pine.....	3 20@ 3 25
Spruce.....	2 50@ 2 55
Cypress.....	2 50@ 2 55

Norfolk.

[From our own Correspondent.]

NORFOLK, VA., November 7.

There has been considerable trade during the week in lumber and timber, and the market is beginning to brighten up a little. There are a number of vessels in port loading, and the number cleared during the past week has been larger than usual. Receipts of air-dried lumber continue moderate and the market is firmer,

fair trade expected during the winter months. The clearances of lumber during the week embrace the following cargo: Schooner Charles A. Coulomb, 295,000 feet; A. H. Howe, 350,000 feet, and Bessie Whiting, 435,600 feet, all for New York. Freight rates are steady at \$4.50 for lumber to Philadelphia and \$4.50 to \$5.00 to New York. The total shipments of lumber since September 1 are 5,580,000 feet to domestic ports and 625,000 to foreign ports, against 7,318,312 domestic and 440,759 foreign in 1891-92. The market closes very steady, with a good demand for choice manufactured lumber and prices unchanged.

Savannah.

[From our own Correspondent.]

SAVANNAH, GA., November 7.

There has been a fairly active market during the week for lumber, and the demand from Northern ports continues steady. The general tone of business throughout the lumber industry is a shade better, and there is an active demand expected during the next three months. The situation

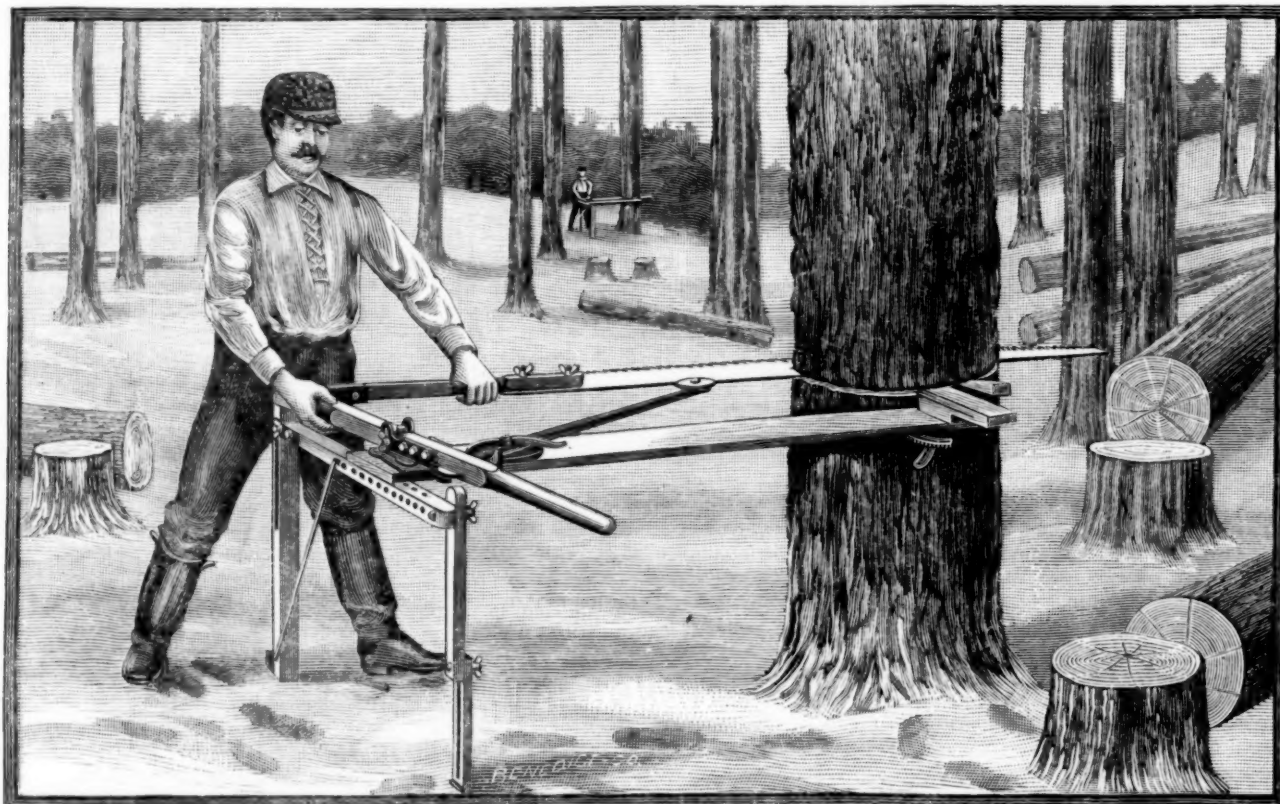


FIG. 2.—FOLDING SAWING MACHINE.

four feet in diameter and 20-inch face. When under speed it shook the building, and the proprietor, becoming alarmed, consulted the expert of the firm who did the work. It was decided that the shaft was too light, and a four-inch shaft was substituted with the same result. A Yankee mechanic who was in the mill remarked that if they would take the pulley off and balance the same they would have no trouble. They finally tried this and found the pulley several pounds out of balance, and when this was remedied the trouble ceased.

"Now, taking the Glasgow machine, which weighed about 6000 pounds, why did not a frame of this size and weight hold the cylinder from jumping about in the boxes? Simply because 6000 pounds did not affect the running of the cylinder in any manner.

"The English makers of woodworking machinery should not run down American machinery, for their own weaknesses can be shown up at all times to their disadvantage."

THE White-Hall Co., at Dillwyn, Buckingham county, Va., is putting in additional machinery to manufacture oak staves, to make all kinds of shuttle blocks, bobbin

actions amount to a moderate business. Box factories and planing mills report a fairly active trade and orders coming in more freely. The following table represents the prices current at this date:

<i>VIRGINIA AND NORTH CAROLINA PINE.</i>	
5-4x10 No. 2, kiln dried.....	\$16 25@
5-4x12 No. 2, " ".....	17 75@
4-4x10 No. 1, " ".....	19 75@
4-4x12 No. 1, " ".....	20 75@
4-4 narrow edge, No. 1, kiln dried..	17 25@
4-4 wide edge, " " " ".....	21 75@
6-4x8, 10 and 12, " " " ".....	23 25@
4-4 No. 1 edge flooring, air dried...	15 00@ 16 00
4-4 No. 2 edge flooring, " ".....	12 00@ 12 50
4-4 No. 1 12-inch stock, " ".....	16 00@ 16 50
4-4 No. 2 " " " ".....	13 00@ 13 50
4-4 edge box or rough wide.....	9 00@ 9 50
4-4 " " (ordin'y widths).....	8 50@ 9 00
4-4 " " (narrow).....	7 50@ 8 00
4-4x12 " " " ".....	10 00@
3/4 narrow edge.....	5 00@ 6 00
3/4 all widths.....	6 00@ 7 00
3/4 10x16 wide.....	9 00@ 9 50
Small joists, 2 1/2—12, 14 and 16 long.	8 00@ 9 50
Large joists, 3—16 long and up.....	9 50@ 10 00
Scantling, 2x3—16 and up.....	8 50@ 9 50
<i>WHITE PINE.</i>	
1st and 2d clear, 4-4, 5-4, 6-4 and 8-4.	45 50@ 52 00
3d clear, 4-4, 5-4, 6-4 and 8-4.....	43 00@ 45 00
Good edge culls.....	15 50@ 17 00
Good stock.....	17 50@ 18 50
<i>CYPRESS.</i>	
4-4x6, No. 1.....	19 00@ 20 00
4-4x6, No. 2.....	14 50@ 15 00
4-4x6, 16 feet, fencing.....	11 00@ 11 50
4-4x6, rough.....	8 00@ 9 00
4-4 rough edge.....	8 00@ 9 00
4-4 edge, No. 1.....	15 00@ 20 00
4-4 " No. 2.....	12 00@ 13 00
<i>HARDWOODS.</i>	
<i>Walnut.</i>	
5-8, Nos. 1 and 2.....	75 00@100 00
4-4, Nos. 1 and 2.....	90 00@100 00

with a better demand, sales being effected with less trouble and at better figures. Shipments of kiln-dried North Carolina pine have been better than usual, but the demand from all Eastern points is only for immediate necessities. Prices continue very firm, and the general list of values adopted by the association is adhered to in most cases. Reports from the interior of the State are more encouraging, and during the week several mills that have been temporarily closed are about resuming operations. Planing mills and other wood industries report business as improving, and nearly all are running on full time, with a fair amount of orders on file at remunerative prices.

Charleston.

[From our own Correspondent.]

CHARLESTON, S. C., November 6.

In the lumber market the volume of trade has improved during the week, and there is good inquiry from Northern ports, as well as a fairly active building demand throughout the city and suburban points. The general outlook for the lumber industry is somewhat brighter since the action of the Senate at Washington, and there is a

throughout the milling section at points in this State adjacent to this city is somewhat brighter, and a number of saw mills that have been shut down during the summer are expected to resume business shortly. The shipments of lumber during the past week aggregated 2,188,798 feet, divided as follows: New York, 823,747 feet and 53,250 shingles; Philadelphia, 132,777 feet and 100,500 shingles; Baltimore, 780,000 feet; Portland, Me., 384,738 feet, and Boston, 66,936 feet. Values continue very steady for the best grades of manufactured lumber, and the local demand for building purposes is better. Easy sizes are quoted \$11.25; ordinary sizes, \$12.00 to \$16.50; difficult sizes, \$13.00 to \$25.00; flooring boards, \$14.50 to \$22.00, and shipstuffs, \$16.50 to \$25.00. Lumber freights are steady at unchanged rates.

Pensacola.

[From our own Correspondent.]

PENSACOLA, FLA., November 6.

Notwithstanding the financial depression the lumber and timber market here has maintained its position during the month of October remarkably well. In the timber trade there is very little doing among

the mills in this district, but in lumber the market has been very active. The European markets are all well supplied with timber, and at present the tone is about steady, with no prospect of higher prices in the near future. The following table shows the clearances for the month from this port, which aggregate 7,070,000 feet of lumber and 8,289,900 feet of timber valued at \$160,944:

NOVEMBER CLEARANCES OF LUMBER AND TIMBER.

Vessel.	Destination.	Lumber Feet.	Timber Feet.
City of Worcester.	Antwerp.	1,446,000	
Geo. W. Sweeney.	Philadelphia.	495,000	
Fulham.	Naples.	817,000	457,000
Samorostro.	Greenock.	18,000	1,094,000
Belvidere.	Montevideo.	477,000	4,000
Fidella.	Genoa.	19,000	465,900
Alyandro Bosch.	Vigo.	379,000	
Zora.	Genoa.	215,000	316,000
Daybreak.	Cardiff.		1,719,000
Rapid.	Buenos Ayres.	239,000	
Helene.	Middleburg.	17,000	712,000
Christian.	Buenos Ayres.	731,000	
Wilhelmina.	East London.	27,000	255,000
Brandon.	Fleetwood.	23,000	881,000
Noel.	Buenos Ayres.	602,000	
Leonora.	Genoa.	436,000	571,000
Bjorgrin.	Dordrecht.	30,000	1,815,000
Bessie Creighton.	Boston.	479,000	
Favorite.	Montevideo.	620,000	
Total feet.		7,070,000	8,289,900

Pitch-pine freights are steady at the late decline, and rates are quotable at £4 7s. 6d. to £4 12s. 6d., according to size and position of vessels. There is nothing doing in steam at present, and quotations for this class of tonnage are nominal. There is some demand for River Platte at \$11.00 to \$12.00 Montevideo or Buenos Ayres, and \$14.00 to \$14.50 for Rio Janeiro.

Mobile.

[From our own Correspondent.]

MOBILE, ALA., November 7.

The lumber and timber business at present is very quiet, shipments are light and there is less being manufactured for export. Timber at present is almost a drug on the market, and at all timber centres in Great Britain and the Continent there is a full supply, with prices showing no signs of any advance. The timber mills in the Mobile district are, therefore, sawing very little, and the output during the next four months will be very much reduced unless the foreign market brightens. There are some vessels chartered to load timber, and there may be considerable shipped, but those in the trade are generally doubtful as to any material activity taking place. Hewn timber for fall delivery is quoted eleven to twelve cents, and timber placed upon the market would bring nine to ten cents per cubic foot for 100 feet average classing B good. The shipments for the week were 21,542 cubic feet of hewn and 72,641 cubic feet of sawn, both to Greenock and London. The demand for choice grades of lumber is fair, and the demand comes principally this week from Central and South America and Cuba. The shipments embrace 1,590,115 feet, and since September 1, 1893, they amount to 3,383,490 feet, against 9,196,957 feet in 1891-92. Lumber and timber freights are steady, with a limited demand for tonnage. Hewn timber to the United Kingdom and Continent is quoted 28s. and 29s. and sawn 85s. to 90s.; lumber to the West Indies \$6.00 to \$7.00 per thousand, and coastwise \$6.00 to \$6.50, Rio Janeiro \$12.00 and Mexico \$7.50 to \$8.50.

New Orleans.

[From our own Correspondent.]

NEW ORLEANS, LA., November 7.

Every indication at present points to a speedy revival of the lumber trade in this section, and the volume of business has shown more expansion during the past week. The various milling sections along the lines of railroad terminating here are beginning to show a little more activity, and some of the saw mills that have been shut down during the summer have resumed operations. Millmen generally feel better over the lumber situation and predict a

better demand during the winter months both for home consumption and export. The local building demand for lumber is fair and for all building material there is a good inquiry. Receipts of building material for the week ending the 3d inst. as reported by the Mechanics, Dealers and Lumbermen's Exchange are as follows:

Material.	This week.	Sept. 1 to Nov. 3.
	1892-93.	1891-92.
Lumber.....	1,430,055	16,236,045
Shingles.....	265,255	1,263,250
Laths.....	49,000	255,000
Brick.....	489,000	4,528,500
Sand.....	8,575	119,305
Lime.....	3,259	30,400
Cement.....	150	33,916
Fire-brick.....	29,000	123,200
Oak staves.....	44,400	1,317,599
Cypress staves.....	121,000	1,396,941

Beaumont.

BEAUMONT, TEXAS, November 6.

The lumber market is quite irregular and the outlook about the same as that reported a week ago. Some manufacturers report the market fairly active, while others complain of a slow demand and sluggish trade. Both the Beaumont Lumber Co. and Nona Mills Co. report a great improvement in trade, which seems to be taking a firm hold, with the confidence that dealers will stock up their yards for the season. The *Journal* in its review of the lumber market says: "The instability of the market is shown by the fact that a few manufacturers report a fairly good trade, while others complain of extreme dullness. The fact is, however, that is generally conceded to be quiet and uncertain. A few orders from dealers come by every mail, but there is nothing resembling activity, and the prospect for an immediate improvement is not particularly bright." There is a moderate offering of timber bills, and all the mills have some sawing orders still on hand. During the month of October the shipments of lumber aggregated 5,007,393 feet of yellow pine lumber, which shows a slight improvement. The total cut of the Nona mills for October was 1,942,753 feet and the number of logs used 12,397. Several mills on the Sabine & East Texas road have been shut down for some time on account of a scarcity of water. The mill of the Aldridge Lumber Co., at Rockland, after being entirely rebuilt, has started up. It has a daily capacity of 75,000 feet and is being run by contract. The schooner Clara A. Phinney, with a cargo of 400,000 feet of lumber, cleared from Sabine Pass last week for Havana, Cuba. This is the first large schooner to complete its cargo inside the bar.

Danish Steamers for Southern Trade.

Alfred Christensen, a ship-owner of Copenhagen, Denmark, has written to the governor of Alabama outlining the plans he is now carrying into effect for the establishment of a line of steamers to run between Copenhagen and the gulf and Mexican ports. He says:

"The idea of running to the West Indies and Mexican gulf ports is chiefly this: In order to get sufficient cargo from this side, which I do not think we would be able to get for ports in Texas, we will, by going to Minatitland, Vera Cruz and Tampico by means of the new Mexican railroad, have an easy communication with the Pacific side, enabling passengers and shippers of goods to and from California and other places to make use of the steamers in the Pacific water where such is preferred. While calling at different ports going out, we shall take the direct route homewards from Galveston or New Orleans.

"The steamer which I am building and the larger boats I intend to build will, if my idea is carried out, be shallow draughted boats enabling them to go right into the named Mexican ports and Galveston, thus saving all lighterage. The draught will

not exceed seventeen feet, English deep-loaded, but as a part of the cargo will be cotton and other light goods, the boats are not likely to draw more than sixteen feet when leaving for Europe."

Missouri Lead and Zinc.

JOPLIN, MO., November 6.

The outlook is more encouraging and there has been some gains during the week in the lead and zinc market. The jack market stiffened considerably, ore selling at Carterville at \$18.00, while here \$17.00 was the top figure. On the Rex land ore was offered this week at \$18.00. The lead market does not show any very considerable strength, but it is thought that prices will not go lower. At Webb City the ruling price for zinc ore was \$18.00 per ton, that being the best figure paid, but a bid on the following week's delivery was made at \$19.00. Lead ore was quite firm all the week at \$18.00, the average price of last week's sales. No complete report has been received of last week's sales at Carterville or Webb City. The sales will be included in next week's report. The sales in the other camps were as follows:

Districts.	Zinc Pounds.	Lead Pounds.
Joplin.....	1,455,920	291,610
Galena.....	1,080,000	200,000
Zincite.....	45,050	4,450
Oronoga.....	47,870	94,080
Total.....	2,628,840	590,140

District value, \$31,168 08.

The Emma Mining Co., at Zincite, has leased twenty acres of the Brooks land and has one shaft down, from which zinc ore is being taken out. A new shaft is being sunk and all the lease will be developed. The superintendent is Edward Mallet.

The large concentrating plant of the South Joplin Mining Co. at Joplin, Mo., was completely destroyed by fire on Saturday last. The plant was built three years ago by Cooley & Elm re and cost \$6000 and was insured for \$2000. It was the property of the South Joplin Mining Co., of which Messrs. D. C. McConey, of Joplin, and T. A. McLelland, H. B. Paine, S. A. Campbell and W. H. Harwood, of Kansas City, were the principal stockholders.

On Saturday morning the reduction works of the American Spelter Co. at Galena, Kans., were discovered to be on fire, and before the blaze could be extinguished the smelter had been damaged to the extent of about \$20,000. The 480 retorts in use and 150 in the pottery, besides 300 condensers, were destroyed. The roasting kilns were ruined, and these will cost \$8000 to \$10,000 to replace. Some of the machinery was considerably damaged, and the total loss will reach \$20,000, covered by insurance. The smelter cost to build \$107,000. E. W. Humphrey, the manager and receiver for the American Spelter Co., was absent in St. Louis.

Judge Geo. W. Martin, of Cincinnati, Ohio, who is largely interested in the zinc industry around Joplin, Mo., told a reporter of the *Joplin Herald* some interesting things the other day about the future of zinc. He said:

"I believe that within ten years there will not be a piece of iron for outdoor use that will not be coated with zinc or galvanized. Just here it may be appropriate to mention the fact that the Keystone Bridge Co., of Pittsburg, Pa., has perfected and patented an invention of its own for galvanizing the largest castings made, and henceforth, unless otherwise stipulated, this company will galvanize all iron put in bridges, viaducts, aqueducts and all other iron work exposed to the air and elements. This galvanizing process, of course, adds cost to the iron work, but finally it is economy, for it will never wear out and it saves the expense of continual painting.

There is unquestionably a far wider field of usefulness for zinc than it has yet occupied.

Cattle Breeding in Texas.

The cattle-breeders of the Lone Star State have taken new life since the protracted season of low price for cattle and the severe drouth of last year. The present seems to be a new era of development and prosperity; there is a large immigration. The great cattle pastures are being divided into farms. A number of oil mills are being erected in several sections of the State to convert cottonseed into oil, and furnishing much feed for cattle. Numbers of poor cattle may be seen on the vast prairies, which live on the dried grasses. But on the ranches the eye is greeted with the sleek, fat beefs at the many troughs scattered about for their feed, with an abundant supply of cottonseed meal and hulls. The Texas Cattle Association represents many thousand head of Texas beef and stock cattle, and encourages the Texas beef industry. Texas at this time can supply the demand for fat beef all the year around. Some of the large ranches that cover many miles are yet to be seen, such as the Matador Land & Cattle Co., of Matador, Texas; Murdo, MacKengil, Manager and the Espuela Land & Cattle Co., of Espuela, Texas, Fred Horbrugh, manager. Boston capitalists have entered into agreement with the Texas Cattle Association to take charge of the packing-house at Fort Worth, and to increase its capacity to 1000 head of cattle and 5000 sheep and hogs per day. The stock of Texas at this time is greatly improved with all the good breed, such as the short-horn, Hereford and others. The long-horn is a thing of the past.—W. L. Moore, in *American Agriculturist*.

Improved Southern Coast Defences.

The need of improved coast defences along the south Atlantic is emphasized by the report of Inspector-General Breckenridge to the Secretary of War. Commenting on the report, *Bradstreet's* says in a late issue:

"Attention will be attracted anew to the subject of coast defences by a report just submitted to the Secretary of War by Inspector-General of the Army Breckenridge. This report characterizes the condition of the defences on the south Atlantic coast as disgraceful. The entire coast in that section, General Breckenridge says, is absolutely unprotected and at the mercy of a foreign foe, and no intelligent and experienced officer can look on the defences there without feeling the deepest solicitude for the safety of our entire coast line. For various reasons the garrisons of twenty-seven of the forts along the Southern coast line have been withdrawn until there is not now, nor has there been in most cases for twenty years, a single soldier to care for them, ordnance sergeants, sometimes superannuated and decrepid, alone excepted. The inspector-general makes a number of suggestions looking to the improvement of the defences, but as the first step he urges that all forts occupying important sites be provided with sufficient garrisons, for the reason that as long as a fort has a garrison it is protected against the ravages which destroy all abandoned structures, and the armament is kept in some sort of condition for use."

In spite of the fact that business in Brunswick, Ga., is almost at a standstill on account of the yellow-fever epidemic, during the month of October fifteen vessels sailed with cargoes from the port. Two were steamships, ten schooners, one brig, one bark and one barkentine. Four of these sailed for foreign and eleven for American ports. The foreign exports foot up \$498,073, and the coastwise \$61,239, making a total for the month of \$559,312. The total tonnage of vessels sailing during the month was 10,255, of vessels arriving 14,353.

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

* Means machinery is wanted, particulars of which will be found under the head of "Machinery Wanted."

† In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Anniston—Dry-kiln.—The Learned-Letcher Lumber Co. is rebuilding its dry-kiln reported last week as burned.

Bessemer—Candy Factory.—N. W. Berglund has established a candy factory.

Huntsville—Woolen Mill.—It is rumored that plans are about completed for a \$100,000 woolen factory.

Mobile—Woodworking Factory.—The Southern Lumber & Woodworking Co. has been formed to succeed the Donald Lumber & Manufacturing Co. and operate its plant. R. J. Miles will be manager.

Pineapple—Grist Mill and Gin.—J. N. Stanford will rebuild his grist mill and cotton gin lately destroyed by fire.*

ARKANSAS.

Little Rock—Machine Shops.—E. C. Wehrfritz will at once rebuild his machine shops noted as burned.

Little Rock—Mineral Springs.—The Granite Mountain Mineral Springs Co. has been organized with George Reichardt, president; J. H. Sannoner, vice-president, and F. M. Fletcher, secretary and treasurer.

Little Rock—Slave Factory.—The Beebe Slave Co. will commence work at once on the new plant. Buildings to cost \$15,000 will be built and equipped with the latest improved machinery.

FLORIDA.

Fernandina—Wood-cutting Mill.—The Southern Fuel Co. will put in a wood-cutting mill. E. W. Bailey is agent.

Key West—Water Works.—The mayor of Key West writes us that the city has not yet awarded contract for its water works.

Orlando—Machine Shop.—The South Florida Foundry has commenced the manufacture of machinery for making wire-grass brooms.

Pensacola—Furniture Factory.—T. E. Harwell, a furniture dealer of Key West, has secured a building in Pensacola which he will equip throughout for the manufacture of furniture.

St. Augustine—Saw Mill.—Walton & Enslow have put in a saw mill.*

Williston—Saw Mill.—F. M. Hester & Sons will rebuild their burned saw mill at once.

GEORGIA.

Griffin—Electric-light Plant and Water Works.—The city will hold an election on December 6 to vote on issuing \$16,000 worth of bonds for water and electric lights.

Savannah—Cotton Mill.—The directors of the Southover Land & Improvement Co. will hold a meeting this week to consider plans for the proposed new cotton factory.

Summerville—Water Works and Sewerage.—A bill has been introduced in the State legislature to authorize Summerville to issue bonds for water supply and sewerage.

KENTUCKY.

Louisville—Stove Foundry.—Messrs. Bridgeford & Co. expect to rebuild their burned stove foundry in a very short time.

MARYLAND.

Anthony—Flour Mill.—A flour mill is being built by J. M. Anthony. Contract for machinery has been awarded.

Baltimore—Bag Factory.—John P. Emerson, of 126 North Wolfe street, has in contemplation the erection of a factory for making a patented paper bag which dispenses with the use of twine and sealing up. Mr. Emerson wants to correspond with parties with a view to securing location or other inducements for locating a factory.

Brunswick—Knitting Mill.—A project is afoot to form a \$10,000 company to establish a knitting mill to manufacture hose and underwear. Z. T. Brantner can probably inform.

Hagerstown.—The Fairview Cemetery Co. has been organized with a capital stock of \$15,000.

Oella—Cotton Mill.—The Oella Mills buildings are being enlarged to accommodate new machinery. W. J. Dickey & Sons, proprietors.

MISSISSIPPI.

Bay St. Louis—Canning Factory.—L. Spotorno is endeavoring to organize a stock company to can oysters, shrimp and figs.*

Hattiesburg—Saw Mill.—F. L. Kelly, of Laurel, has bought the Kemper Bros.' plant and will operate it; will also erect a new dry-kiln.

Laurel—Dry-kilns.—Eastman, Gardiner & Co. will put in two 30,000 feet capacity dry-kilns.

Natchez—Electric-light and Power Plant.—The Natchez Heat, Light & Transit Co. has a practical engineer investigating relative to its proposed electric plant.

Vicksburg—Furniture Factory.—Theo. B. Peterson, of De Kalb, Ill., has been negotiating with the Commercial Club relative to establishing a furniture factory in Vicksburg.

MISSOURI.

Kansas City—Cigar Factory.—James O'Brien, Daniel J. Sullivan and S. J. Sullivan have incorporated the James O'Brien Cigar Manufacturing Co. with a capital stock of \$15,000. Purpose is indicated in title.

Kansas City—Publishing Company.—Edwin P. Brink, Clifton Brink, E. B. Veazie and Robert H. Ragan, of Kansas City, and Edward H. Power, of St. Louis, have incorporated the Architectural Publishing Co. with a capital stock of \$10,000.

Macon.—John T. Gelhaus, Charles Weakley, Thomas E. Wardell and others have incorporated the Macon Investment Co. with a capital stock of \$16,000.

St. Louis—Trunks.—P. C. Murphy, W. C. Richards, John J. Mulcahy and others have incorporated the P. C. Murphy Trunk Co. with a capital stock of \$70,000.

St. Louis—Commission.—J. H. Merten, Emil Schumacher and Wm. G. H. Merten have incorporated the J. H. Merten Commission Co. with a capital stock of \$12,000.

St. Louis—Excelsior Factory.—The Missouri Excelsior Manufacturing Co. will rebuild its factory noted as burned.

St. Louis—Pharmacy.—Eugene Van Ness, M. M. Clark and C. O. Van Ness have incorporated the Cooper Pharmacy Co. with a capital stock of \$25,000.

St. Louis—Timber Company.—The Bagnell Timber Co. has been chartered by Robert, William and Thomas H. Bagnell with a capital stock of 150,000.

NORTH CAROLINA.

Catawba—Flour Mill.—Hunt, Connor & Co. will erect a complete six-roll flour mill. Contract for equipment is awarded.

Charlotte—Iron Works.—A. French and John M. Parterson, both of Pittsburgh, Pa., were in Charlotte last week. They are visiting the State prospecting with a view to the erection of a large ironworking-machinery plant.

Charlotte—Cradle and Carriage Factory.—A factory for manufacturing a combined cradle and carriage may be established in Charlotte. Abner Woodward, of Massachusetts, and R. E. Grubbs, of Greenville, S. C., are interested.

Charlotte—Gold Mine.—E. W. Hovey has leased a gold mine in Long Creek township and organized the Hovey Mining Co. to develop it.

Ellenboro—Flour Mill.—David Beam will build a roller flour mill. Contract for machinery is awarded.

Knistow—Cotton Gin.—W. F. Stanly will build a new cotton gin shortly.

Lincolnton—Flour Mill.—A. Costner & Co. are increasing the capacity of their flour mill.

Monroe—Gold Mine.—A company is to be formed soon to develop the Surface Hill gold mine in Mecklenburg county.

Relief—Flour Mill.—R. N. Griffith has completed a 25-barrel flour mill.

Winston—Cigar and Cigarette Factory.—Thomas H. Sutton, J. R. Williams, W. C. Briggs, W. T. Brown, W. L. Brown and W. B. Pollard have

incorporated the Winston Machine Co. to manufacture cigarettes, cigarette machines, cigars, etc.

SOUTH CAROLINA.

Aiken—Water Works.—The artesian well sunk by the city has proven a success, water being found at 175 feet to 200 feet below the surface. Arrangements will now be made immediately for the entire equipment of a water-works plant. M. B. Woodward, chairman of citizens' committee, can be addressed.*

Charleston—Cold-storage Plant.—The Cold Storage & Manufacturing Co. has been chartered for the purpose of conducting a cold-storage business. The incorporators are William Mappus, C. F. Myer, A. S. Grant, F. L. Hackemann and G. W. Myer.

TENNESSEE.

Chattanooga—Woodworking Plant.—The Central Manufacturing Co. will erect a large woodworking plant. Lot has been secured and buildings will be erected at once. Architect John Ray is preparing plans.

Humboldt—Electric-light Plant and Water Works.—The city has voted an issuance of bonds to contractors to secure the electric-light plant and water-works system lately noted.

Huntingdon—Woodworking Factory.—Dexter & Medd, of Minneapolis, Minn., contemplate building a stove and handle factory in Huntingdon. They have made the citizens a proposition to locate the plant.

Knoxville—Packing-house, etc.—The Knoxville Butchers' Association has completed its abattoir and commenced operations. If the enterprise proves successful, as it doubtless will, the association intends within a year to increase its capital stock to \$25,000 (it is now \$10,000) and arrange to start a packing department and a fertilizer factory to utilize the waste matter.

Nashville—Cotton Mill.—An attempt is to be made to reorganize the Nashville Cotton Mills Co. and put the plant in operation. G. M. Fogg can give information.

Trenton—Gas Wells.—A company has been formed to bore for oil and gas in Lake county. Joe B. Seat and David Dickson are interested.

Union City—Bed Factory, etc.—A charter has been granted to the Curlin Manufacturing Co., its purpose being to manufacture air beds, air pillows and air cushions. The incorporators are Wm. Askins, R. J. Chitwood, T. B. Grier, D. A. George, L. S. Parks, Rice A. Pierce and A. J. Harpole.

TEXAS.

Beeville—Water Works.—Greathouse & Taylor have submitted plans for a system of water supply, and the citizens now have the matter in hand for contemplation.

Belton—Steam Laundry.—Mrs. Martha McWhister will install a new steam laundry to replace one recently burned.*

Bruceville—Water Supply.—An artesian well will be sunk for a water supply. G. B. Harris, E. T. Cox and L. P. Field are interested.

Dallas—Refrigerators.—James Simmons, D. J. Kavanaugh and George J. Kavanaugh have incorporated the James Simmons Refrigerator & Manufacturing Co. with a capital stock of \$20,000.

Dallas—Paint Company.—E. M. Reardon, George E. Beeler and James Aiken have incorporated the Hamilton Paint & Glass Co. with a capital stock of \$50,000.

Fort Worth—Machinery, etc.—The Stratton-White Co. has been incorporated to deal in machinery, vehicles, etc., with a capital stock of \$100,000. The incorporators are W. H. Stratton, George White, R. J. White, Edward Ritchie, J. B. Bushnell, G. A. Stephens, J. E. Sullivan, W. Y. McIvor, F. B. Ingram and George W. Armstrong.

Galveston—Cooker.—M. M. Levy, G. H. Nichols and William Wiley have incorporated the Quick Cooker Co. with a capital stock of \$10,000.

Henrietta—Water Works.—The city is putting in a plant to cost when completed \$25,000. Bonds for this amount have been placed. W. A. Squires, mayor.

Llano—Water Works.—The city has contracted for water works. Rounds & Schafer, of San Antonio, secured the award.

Velasco—Sugar Mill.—Captain Mather will erect a sugar mill and probably a refinery.

VIRGINIA.

Aldie—Flour Mill.—J. E. Douglas is to erect a 50-barrel flour mill and contract has been let for complete equipment.

Bedford City—Flour Mill.—E. C. Kirby, of Roanoke, has purchased the Hardy mill, near Bedford City, and will equip it with new flouring machinery.

Danville—Flour Mill.—The new flour mill noted

last week will operate under the charter name of the Dan Valley Mills.

Danville—Flour Mill.—A company has been organized to erect a flour mill and a charter has been applied for. J. I. Pritchett is president, and W. H. Hill, secretary and treasurer, both of Greensboro, N. C.

Danville—Flour Mill.—The new milling company lately noted has let contract to the E. P. Allis Co., of Milwaukee, for the erection of its flour mill. The plant will have a daily capacity of 150 barrels.

Harrisonburg—Flour Mill.—J. C. Beery & Co. are building an addition to their flour mill.

Luray—Water Works.—The citizens are interested in a proposition for the construction of a water system. The cost is estimated at \$27,000.

Norfolk—Publishing.—The Norfolk Tribune Co. has been chartered to publish a daily newspaper. E. J. Kauffman is president and editor; W. H. Turner, vice-president, and C. N. Rav, secretary and treasurer. The capital stock is to be not less than \$30,000 nor more than \$100,000.

Norfolk—Real Estate.—The Columbian Co. of Lambert's Point has been chartered to deal in real estate, etc. The capital stock is \$25,000; E. J. Acker, president; W. T. Brooke, vice-president, and George W. Dey, secretary and treasurer.

Petersburg—Broom and Brush Factory.—S. D. De Shayer and L. C. Harris have formed the Petersburg Manufacturing Co. and will engage in the manufacture of brooms, brushes, feather dusters, etc.

Richmond—Road Improvements.—The special committee on roads has recommended to the legislature the appropriation of \$60,000 for the employment of a civil engineer in each senatorial district for the surveying and laying out of public roads.

Richmond—Commission, etc.—A charter has been granted to the Southern Farmers' Supply & Commission Co. with a capital stock of \$10,000. T. F. Minor is president; W. W. Hardwick, vice president, and H. B. Hartman, secretary and treasurer.

Richmond—Electrical Supplies.—A charter has been granted to the Old Dominion Electrical Construction Co. for the purpose of manufacturing all kinds of electrical machines, furnish light and power, etc. Maurice W. Thomas is president; J. Powell Eastwood, vice-president, and Maurice Hunter, secretary and treasurer. The directors are the above, W. B. Saunders and A. B. Guigon. Capital stock is placed at \$25,000.

Rocky Mount—Flour Mill.—R. E. Hall is erecting a 60-barrel flour mill. Contract for entire plant is awarded.

WEST VIRGINIA.

Bluefield—Printing Works.—The Bluefield Daily Journal is to add to its printing plant a new boiler and engine and other machinery.

Bluefield—Telephone Lines.—The Flat Top Telephone Co. is putting in its poles around the city; also to Princeton, the county seat, nine miles from Bluefield, and to Graham, three miles distant.

Bluefield—Electric-power Plant.—The foundation for the power station of the Bluefield-Graham Electric Light, Power & Railroad Co. is about completed.

Bluefield—Machine Works.—A charter has been granted to the Bluefield Quilting Machine Co., having for its purpose the manufacture of a new and improved machine for quilting. The incorporators are B. F. Childers, of Johnson City, Tenn.; H. H. Stratton, of Chattanooga; F. W. Smith, W. S. Foutz, C. L. Knight, Joseph Tyler and others, of Bluefield. Capital stock \$10,000.

Waterloo—Flour Mill.—Mrs. S. S. Buxton is remodeling her flour mill to the roller process with a daily capacity of forty barrels. Contract is awarded.

Wheeling—Ice Factory.—The large ice consumers of the city contemplate building a plant. A committee is now at work endeavoring to form a company.

Winfield—Publishing.—A charter has been granted to the Putnam County Publishing Co. with a capital stock of \$5000 for the purpose of publishing a newspaper. The incorporators are J. T. Womeldorf, F. J. C. Kemmer and several others of Buffalo, and Allen Hanley, of Winfield.

BURNED.

Ambia, Texas.—Wilson Bros.' cotton gin.

Brown's Crossing, Ga.—D. W. Brown's gin, grist and saw mill.

Cleburne, Texas.—J. L. Davis's cotton gin.

Columbus, Ga.—J. B. David's cotton gin, near Columbus.

Dallas, Texas.—The Scottish-American Mortgage Co.'s building; loss \$75,000; insurance \$45,000.

Donaldsonville, La.—The Ascension Bottling Works.

Fairmont, W. Va.—Twenty-two buildings owned by the Monongah Coal Co.; loss \$12,000.

Fort Payne, Ala.—The *Journal* printing office and stores of James G. Dobbs, Pearson & Hughes and A. B. Green; loss \$25,000.

Graniteville, Mo.—The Syntec Co.'s stone sheds and polishing mill; loss on machinery \$20,000.

Hawkins, Texas.—Clower & Phillips's saw and planing mill.

Hondo City, Texas.—Southern Pacific Railway passenger and freight depots; loss estimate \$15,000.

Jonestown, Miss.—Stores of R. B. Moseley, C. L. Jones and W. Ling; loss \$12,000.

La Fayette, Ala.—U. T. Blessingame's cotton gin near La Fayette; also C. J. Sturkie's gin, same location.

Lampasas, Texas.—Baxter & Hatten's gin.

Lexington, Miss.—The courthouse; loss estimate \$25,000.

Little Rock, Ark.—E. C. Wehrfritz's Union Machine Shops; loss \$35,000.

Louisville, Ky.—Bridgeford & Co.'s stove foundry and tin-stamping plant; loss \$70,000.

Lovelady, Texas.—J. B. Jones's cotton gin, near Lovelady.

Monroe, La.—E. Fudickar's cotton gin, near Monroe.

Navasota, Texas.—Chris Becker's cotton gin.

Olivier, La.—Mrs. M. E. Veasey's cotton gin.

Sand Mountain, Ala.—Elrod's flour mill, gins and saw mill badly damaged by explosion.

Sanford, N. C.—The Sanford Hotel.

Savannah, Ga.—J. D. Lanier's cotton gin in Bullock county.

Seale, Ala.—Rush & Kobb's cotton gin.

Shelbyville, Ky.—Allen M. Snook's tobacco re-handling house.

St. Louis, Mo.—The Missouri Excelsior Manufacturing Co.'s factory; loss \$500.

Williston, Fla.—F. M. Hester & Sons' saw mill.

BUILDING NOTES.

Belton, Texas—Hotel.—The Central Hotel, recently burned, is to be rebuilt at once. Address Mrs. Martha McWhister.

Bluefield, W. Va.—Block.—J. L. Higginbotham is having plans prepared for a three-story building to be used for stores and offices. It will be constructed of brick.

Bluefield, W. Va.—Block.—L. Lazarus & Co. have had plans prepared for a business block which they will erect next spring.

Chesterfield, S. C.—Jail.—Plans have been prepared for the jail to be erected. It is to contain steel cells, also a jailor's house. Bids will be received until December 4 by G. W. Spencer.

Havre de Grace, Md.—Hotel.—The hotel Isaac Hecht is to build will cost \$5000 complete. Jackson C. Gott, of Baltimore, is the architect.

Leesburg, Va.—Courthouse.—Plans have been prepared for the erection of a courthouse for Loudoun county. A building committee, including N. B. Peacock and D. Nichols, has been appointed who will inform inquirers. The building is to cost \$12,000.

Luling, Texas—Hall.—A project for building a hall for public gatherings is being agitated.

New Orleans, La.—Dwelling.—W. Miltenberger has obtained permission to erect a dwelling-house of frame and cement to cost \$14,000.

New Orleans, La.—Church.—H. Huiskamp is architect for the English Lutheran church to be completed at a cost of \$14,000. The contract has been let.

New Orleans, La.—Hotel.—The Grunewald Hotel is to contain all the latest features in hotel construction and will have 230 rooms. It is to cost complete \$320,000. Address the Louis Grunewald Co., Limited.

New Orleans, La.—Insurance Building.—The Crescent City Insurance Co. will add another story to its present building and alter and improve the interior.

Pocahontas, Va.—Church.—The Hungarian Catholics of Pocahontas are raising funds to erect a new edifice. Father J. Jackovitz may be addressed.

Richmond, Va.—Masonic Home.—The board of governors have awarded the contract for erecting the Masonic Home to J. A. Thomas for \$31,857.

Roanoke, Va.—Y. M. C. A. Hall.—The Railroad Y. M. C. A. will erect a building in West Roanoke to contain a hall large enough to accommodate 400 people.

Sanford, N. C.—Hotel.—It is reported that W. T. Buchanan will erect a hotel to cost about \$1000.

St. Louis, Mo.—Depot.—The Kansas City & Northwestern Railroad Co. has received permission to build a passenger station and train-shed on Second street. It will be 320x75 feet and cost \$10,000.

St. Louis, Mo.—Exchange.—T. B. Annan & Sons have prepared plans for the improvements to the Merchants' Exchange, which will cost \$150,000. They include two passenger elevators of the best

quality and the enlargement of the lobbies and entrances. A large portion of the interior is to be lined with Italian marble and paved with marble and mosaic work. A large lavatory of the finest character is to be built. Address G. H. Morgan, secretary.

St. Louis, Mo.—Freight Depot.—The Adams Express Co. will build a two-story freight depot of brick on Eighteenth street to cost \$20,000.

RAILROAD CONSTRUCTION.

Railroads.

Beaumont, Texas.—The engineers are making surveys for the northern extension of the Gulf, Beaumont & Kansas City, which will terminate at a point in Jasper county. A bridge over the Neches river will be required. John H. Kirby, Beaumont, is general manager.

Bel Air, Md.—Engineers are now making estimates of the cost of the electric railway it is proposed to build between Bel Air and Havre de Grace, Md. The Hughes & Rigby Engineering Co., of Baltimore, is interested.

Bonne Terre, Mo.—The Mississippi River & Bonne Terre has begun the work of changing its line to standard gage. C. B. Parsons, at Bonne Terre, may be addressed.

Cloudland, N. C.—W. E. Ragsdale, of the Cloudland Hotel, is interested in building an electric road from the summit of Roan mountain to the base. He will give information about the project.

Conroe, Texas.—Tracklaying on the Texas, Louisiana & Eastern is now progressing between Springer, Texas, and the Trinity river, over which a bridge is to be built. W. C. Beach is chief engineer.

Corpus Christi, Texas.—It is stated that the bonus agreed upon by the citizens for the construction of a railroad from Brownsville to Corpus Christi has been raised. S. G. Miller agreed to build the line if bonuses were raised at Brownsville and Corpus Christi. N. Gussett, of Corpus Christi, is interested.

Culpeper, Va.—It is stated that Chicago and Baltimore capitalists are interested in the proposed electric line between Culpeper and Sperryville, and will obtain a franchise to build it from the State legislature.

Penbro, W. Va.—The Welsh Colony Railroad Co. is the title of the new corporation building the line from Avondale, on the West Virginia Central, to Penbro. The roadbed is now ready for the track.

Raleigh, N. C.—Agents for the Ohio River & Charleston are securing right of way through the Blue Ridge mountains for the connection to be made between the North Carolina and Tennessee sections of the road.

Randallstown, Md.—Residents of Randallstown and vicinity are interested in a stock company it is proposed to organize to build an electric road from Randallstown to connect with one of the Baltimore suburban electric roads. E. S. Choate and A. T. Myer are among those interested.

Rocheport, Mo.—Work on the extension of the Missouri, Kansas & Texas at Rocheport has been resumed. Superintendent Lyons, at Sedalia, will inform.

San Antonio, Texas.—Surveys are being made for the extension of the Missouri, Kansas & Texas from San Marcos to San Antonio. The road will be about thirty-five miles long. Chief Engineer Wilson may be addressed at St. Louis or San Marcos.

San Antonio, Texas.—It is reported that the Missouri, Kansas & Texas is preparing to build into San Antonio from San Marcos, and that Engineer Wilson is preparing to make surveys of the proposed line.

Sandersville, Ga.—John N. Gilmore, of Sandersville, and others have asked for a charter for the proposed railway to be built from Sandersville to Tennesse, three miles distant.

Savannah, Ga.—About thirty miles of the extension of the Florida Central & Peninsular to Savannah remain to be completed. It is now expected to have the line in operation between Jacksonville and Savannah by December 1. Several miles of sidings for yards will be built in Savannah.

Savannah, Ga.—Directors of the Middle Georgia & Atlantic have decided to complete the line to Covington from its present terminus. The distance is seven miles, most of which is ready for rails and ties. President Williams, at Savannah, will inform.

Standing Stone, Tenn.—A force of 400 men is engaged on the Nashville & Knoxville building the line from Standing Stone towards Knoxville.

St. Joseph, Mo.—The Central Railway & Terminal Co. of St. Joseph has decided to extend its line from Pattonsburg to the Mississippi river. The extension will pass through Davies, Grundy, Sullivan, Knox, Adair and Marion counties and will be sixty-five miles long.

Tuscaloosa, Ala.—It is stated that work will be commenced on the Montgomery, Tuscaloosa & St. Louis division of the Mobile & Ohio in about

two weeks. Work is to begin at Columbus, Miss. J. W. Woolfolk, of Montgomery, Ala., has the contract.

Waco, Texas.—The proposed branch to give the Santa Fe system an entrance into Waco is to be called the Waco, Mooreville & Austin. Grants of right of way and of depot sites have been secured, and a proposition is to be made to the Santa Fe Company to build the line.

Street Railways.

Chattanooga, Tenn.—An electric railway line is to be constructed on Carter street, in the city, and poles and wire, it is stated, have been ordered. Address P. K. Roots, general manager.

Lynchburg, Va.—The extension of the Rivermont Street Railway has not been commenced, as no contracts have as yet been awarded.

Newberne, N. C.—A company has been organized to build and operate an electric street railway.

New Orleans, La.—The New Orleans Traction Co. has absorbed the City & Lake Railway and will rebuild its lines for the use of electric motors. Work is to begin in a few days. The system comprises sixty miles of track at present operated by mule and steam dummy power. Address H. M. Littell for information.

MACHINERY WANTED

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Baling Press.—Amon Green & Co., 5 and 7 West German street, Baltimore, Md., are in need of a good second-hand power baling press, capacity not to exceed 400 pounds.

Belting.—Mrs. Martha McWhister, Belton, Texas, wants some belting.

Canning Machinery.—L. Spotorno, Bay St. Louis, Miss., wants to correspond with manufacturers of canning machinery.

Cotton Gin.—J. N. Stanford, Pineapple, Ala., will buy a cotton gin.

Drying Machinery.—Edw. L. Morris, Farmville, Va., wants the latest improved machinery for steam-drying leaf tobacco.

Emery Wheels.—Jno. M. Houck, Lenoir, N. C., will want emery wheels.

Engine.—Morgan Thompson, Sharp, N. C., wants a steam engine, second-hand, small size, without boiler.

Exhaust Fan.—Walton & Enslow, St. Augustine, Fla., want to purchase a 32-inch shaving exhaust fan with necessary connections for mill; second-hand equipment will do.

Gas Machine.—Isaac Hecht, Harve de Grace, Md., will want a gas machine for fifty lights.

Grist Mill.—J. N. Stanford, Pineapple, Ala., will buy a grist mill.

Handle and Spoke Machinery.—Jno. M. Houck, Lenoir, N. C., will want handle and spoke machinery.

Lathes.—The Memphis Gin & Machine Co., Memphis, Tenn., is in the market for a wood lathe 22-inch swing, and a pattern-maker's lathe.

Laundry Machinery.—Mrs. Martha McWhister, Belton, Texas, wants two washers and other laundry machinery.

Pumps.—The Shawhan-Thresher Electric Co., Dayton, Ohio, wants to correspond with the manufacturers of triplex mining pumps.

Roofing and Siding.—Benson Goff, Fannin, Texas, wants prices on corrugated galvanized iron suitable for building ginhouses.

Shaper.—The Memphis Gin & Machine Co., Memphis, Tenn., is in the market for a 20-inch shaper.

Saw Mill, etc.—F. M. McKay, Summerville, N. C., may buy a saw mill, planer and matcher.

Water Works.—Bids are wanted for an equipment of machinery for an entire water-works system at Aiken, S. C. Plant to include stand-pipe, reservoir, iron piping, fire hydrants, steam pumping engine of thirty-five to fifty horsepower. Address W. B. Woodward, chairman of citizens' committee, Aiken, S. C.

Jno. M. Houck, of Lenoir, N. C., will want iron material for wagons and agricultural implements.

J. T. Merritt & Son, of Greenville, Texas, want prices on wire cloth suitable for screen doors and windows in lots of twenty rolls or more. Quote prices delivered at Greenville and f. o. b. shipping point, with freight rate.

F. J. Kohn, of Columbus, Ga., wants to corres-

pond with manufacturers of small castings with a view to contracting for some work.

Mrs. Martha McWhister, of Belton, Texas, wants 120 inside blinds, water-closet fixtures, lavatory bowls, sinks, door and blind hinges, locks, transom-lifts, etc.

The McColl Manufacturing Co., of McColl, S. C., wants to correspond with manufacturers of white-pine cases.

W. W. Folsom, secretary of the Augusta Street Railway Co., of Augusta, Ark., wants to buy a horse car for use on the road.

H. A. Barnes, of Sedalia, Mo., will soon want to buy a lot of carriage wheels.

The Hauser, Brenner & Fath Co., of Cincinnati, Ohio, is in the market for thirty carloads of first and second white oak three inches thick, mostly ten feet long. Must be A No. 1 tank stock and not less than nine months on stick.

HARBOR IMPROVEMENT, ETC.

Rockport, Texas.—Brewster Cameron, of Tucson, Ariz., has made a contract to deepen the entrance to Aransas harbor, work to begin in sixty days. He is to receive \$600,000 in land and money when the work is completed. His temporary address is Bel Air, Md.

TRADE NOTES.

W. A. HEFFERNAN, the well-known manufacturer of stained glass at Lynchburg, Va., has received a large order from Little Rock, Ark.

The Crompton Loom Works, Worcester, Mass., has received the highest honors at the World's Fair, having been awarded three medals and three diplomas.

The Ingersoll Sergeant Rock Drill Co., of New York, has recently received from the World's Fair judges notice of award of first prize for compound duplex Corliss air compressors, straight line air compressors, Ingersoll-Sergeant rock drills, coal cutter, stone channeling machine, bar channeler, electric battery and other devices and improvements in machinery for mining, tunneling and quarrying.

LUMBERMEN and those connected with the lumber trade will be pleased to learn that Birmingham & Paul have taken offices in the Firemen's Building, Baltimore, and will conduct a wholesale trade in lumber, handling kiln and air-dried North Carolina pine and hardwoods. Mr. Birmingham comes from Norfolk, and Mr. Paul is from Buffalo, N. Y., and both gentlemen are well known in the trade.

The Miller Lock Co., of Philadelphia, has received the following awards from the World's Fair judges: For the "Champion," "999" and "Automatic" brands of padlocks, for the "Champion" keyless drawer and chest locks, for the "Champion" keyless treasure-boxes, for the "Jackson" non-pickable lock, for bronze post-office lock-boxes secured by the "Jackson" lock and latch, for the "Fairbanks" improved railroad switch lock. Of the above the postoffice box is sold exclusively by N. H. Morgan & Co., Room 918, Marshall Block, Chicago. The railway lock is distributed by the Fairbanks Co. and Fairbanks, Morse & Co. from their scale warehouses throughout the United States. The other locks are distributed by the jobbers and exporters. This is the fifth international exhibition to give its medal to the Miller Lock Co. Paris in 1889 gave the company two medals, silver and bronze, no other American exhibitor receiving better than bronze.

The Turner & Seymour Manufacturing Co. at Torrington, Conn., has decided to build its new foundry of iron, and has placed the contract with the Berlin Iron Bridge Co., of East Berlin, Conn. The old foundry burned a short time ago, and the company has determined to build the new foundry entirely of iron and brick—the sidewalls of brick, the roof of iron. The roof will be furnished by the Berlin Iron Bridge Co., of East Berlin, Conn., and will consist of iron trusses and iron purlins covered with the Berlin Iron Bridge Co.'s patent anti-condensation corrugated iron. When completed the building will contain no woodwork whatever, except the window frames and casings, so that it will be absolutely fire-proof, and it is the intention of the Turner & Seymour Manufacturing Co. to carry no insurance on the building, as the Berlin Company guarantees that if all the wooden flasks which the company uses at any one time were piled in one place in the building and fired, that the roof would suffer no damage.

MANY of the large public institutions all over the country are using the Morse valve reseating machine, made by the Leavitt Machine Co., Orange, Mass. Among them may be mentioned the following railroad companies: New York, New Haven & Hartford, Boston & Albany, Delaware & Hudson Canal Co., New York, Boston & Providence, Delaware, Lackawanna & Western, Pennsylvania Railroad, Pennsylvania Lines, New York Central & Hudson River, Fitchburg, Lehigh Valley, Pittsburg & Lake Erie, New York & New England, Maine Central, Baltimore &

Ohio, Valley, Chicago & Grand Trunk, Grand Rapids & Indiana, Indianapolis Union, West Chicago, Staten Island Rapid Transit, Buffalo, Rochester & Pittsburgh, Erie, N. Y., P. & Ohio, Philadelphia & Reading, Indianapolis & St. Louis, Great Northern Railway Line, Western New York & Pennsylvania, Philadelphia & Erie, Summit Branch, Mineral Ridge, Third Avenue Cable Road, New York; Cincinnati Street Railroad, Lycoming Electric Railroad, Williamsport, Pa.; Federal Street & Pleasant Valley Street Railroad, Central Traction Co., Pittsburg, Pa.; Central Railroad of New Jersey, Port Reading, Connecticut River, Terre Haute & Indianapolis, Illinois Central, Chicago & Eastern, Chicago, Rock Island & Pacific, Chicago, Burlington & Quincy, Worcester County Jail, Worcester, Mass.; New Lunatic Hospital, Worcester, Mass.; Worcester Lunatic Hospital, Worcester, Mass.; Massachusetts Reformatory, Concord Junction, Mass.; State farm, Titicut Station, Mass.; State Primary School, Palmer, Mass.; Westborough Insane Hospital, Westborough, Mass.; Taunton Lunatic Hospital, Taunton, Mass.; Northampton Lunatic Hospital, Northampton, Mass.; Danvers Lunatic Hospital, Danvers, Mass.; Bristol County Jail and House of Correction, New Bedford, Mass.; Reformatory Prison for Women, Sherborne, Mass.; United States Naval Hospital, Chelsea, Mass.; United States Marine Hospital, Chelsea, Mass.; City of Boston, Boston, Mass.; Am. Con. Association, Boston, Mass.; Essex County Courthouse, Salem, Mass.; Essex County House Correction, Ipswich, Mass.; Essex County House Correction, Lawrence, Mass.; McLean Asylum, Somerville, Mass.; House Correction, East Cambridge, Mass.; State Reform School, Howard, R. I.; State Prison, Howard, R. I.; Insane Asylum and Woman's Prison, Howard, R. I.; Providence County Courthouse, Providence, R. I.; Brown University, Providence, R. I.; State Capitol, Hartford, Conn.; Industrial School for Girls, Middletown, Conn.; Yale College, New Haven, Conn.; Fairfield County Commissioners, Bridgeport, Conn.; Bloomingdale Asylum, New York; New York State Hospital, Binghamton, N. Y.; Soldiers and Sailors' Home, Erie, Pa.; Mercy Hospital, Pittsburg, Pa.; Homeopathic Hospital, Pittsburg, Pa.; Department of Charities, Pittsburg, Pa.; St. Vincent's Abbey, Beatty, Pa.; German Hospital, Philadelphia, Pa.; Pennsylvania State Lunatic Hospital, Harrisburg, Pa.; Department of Charities, Allegheny City, Pa.; City Infirmary, Cleveland, Ohio; Earlham College, Richmond, Ind.; State Capitol, Indianapolis, Ind.; Courthouse, Indianapolis, Ind.; County Asylum, Indianapolis, Ind.; Southern Insane Hospital, Evansville, Ind.; Department Public Works (three), Chicago, Ill.; Cook County Normal Schools, Chicago, Ill.; University of Michigan, Ann Arbor, Mich.; Michigan State Prison, Jackson, Mich.; Board Public Works, Grand Rapids, Mich.

Fertility of the Pecos Valley.

The Pecos valley, which extends through portions of Texas and New Mexico, is one of the most fertile in this country, although agriculture is dependent wholly on irrigation. The irrigation system there is the largest in the world, covering 200,000 acres of land. Four million dollars have already been expended on it, and \$1,000,000 more will be spent within a year. The water comes from the Pecos river, which is fed by springs having a measured flow of 800 cubic feet of water each second, into a lake thirteen miles long and three miles wide. This lake has a capacity of 6,000,000,000 cubic feet of water.

Speaking of the settlement of the valley and the profits arising from its cultivation, Charles B. Eddy, founder of the town of that name which lies in the valley, says:

"The country is being settled rapidly. There are now 6000 people in the valley, and it is predicted by men who are competent to judge that the time is not far distant when there will be 100,000 there. We have already sold 60,000 acres of water rentals and there are 20,000 acres under the plow. Of these 60,000 acres of rentals, I believe the average number of acres for each farm will not be over forty. Forty acres are as much as any man need cultivate, for with that rich soil and assured water he can make more than a handsome living off this area. The water rentals are sold for \$1.25 each year per acre, though for the privilege \$10.00 per acre is charged. So the land costs \$11.25 per acre, the \$1.25 being the price paid to the government. Of course, it is valueless without the irrigation privileges, but the moment it is obtained it is worth from \$20.00 to \$30.00 per

acre. Of course, the valley is principally a fruit country. But it requires time to start an orchard or a vineyard, and as the people have to live in the meantime, they are following agriculture just now. Wheat grows there, and it is of an excellent quality, but the yield scarcely justifies the work. Corn is also grown. I took some corn to the World's Fair, and among it there was one stalk which was sixteen feet high and the first ear hung ten feet above the ground. The quality of the corn is in keeping with its size, too.

"Alfalfa is the principal crop, though. The yield is enormous and the profits big. Hitherto much of it has been shipped away, but the home consumption will demand it all this year, I think. However, it won't be long until horticulture will assume preponderance and agriculture will be followed incidentally. Already there are some large orchards, and as every settler plants trees immediately after arriving, the Pecos valley is destined to become the largest fruit-producing region in the world. Vine culture will push it closely, too. There is now one vineyard of 640 solid square acres. It was planted last year, and next season it will bear. When it shall be in full bearing it will produce 250 carloads of grapes annually. All of them will be shipped away fresh, though eventually wine-making will become an important industry."

Grain Exports from New Orleans.

The chief grain inspector, Mr. Robert McMillen, of the New Orleans Board of Trade, reports the following clearances of grain from that port for the month of October, 1893:

Vessel.	Destinat'n	Corn. Bus.	Wheat. Bus.
Nicaraguan	Liverpool	65,000	44,000
Orion	Liverpool	25,000	90,000
Jamaican	Liverpool	12,000	48,500
Heracles	Liverpool	59,239	40,000
Navigator	Liverpool	16,000	24,000
Ramon de Lawa-	Liverpool	25,000	17,200
naga	Liverpool	16,000	24,000
Murciana	Liverpool	40,000	24,000
Louisianian	Liverpool	16,000	24,000
Vesto	Liverpool	24,000	24,000
Niceto	Liverpool	25,000	24,000
Hugo	Liverpool	17,200	16,000
Travelier	Liverpool	24,000	24,000
Professor	Liverpool	24,000	24,000
Cheruska	Hamburg	24,000	24,000
Kherwieder	Hamburg	24,000	24,000
Queensland	Havre	64,039	50,450
Weston Hall	Havre	24,000	24,000
Fencer	Havre	24,000	24,000
Glengoil	Rotterdam	65,884	35,000
Niguel Jora	Barcelona	35,000	31,000
Conde Wifredo	Barcelona	31,000	24,000
Loango	Bremen	24,000	40,000
Knights of St.	Bremen	36,317	29,766
George	Bremen	29,766	24,000
Terra	Bremen	877,112	3,150
Rotherfield	Bremen	1,147,545	145,133
Havre	Antwerp	270,433	
Total October, 1893		148,283	877,112
Total October, 1892		3,150	1,147,545
Increase		145,133	
Decrease			270,433

The shipments of oats amounted to 23,110 bushels to Havre, France, by steamship Queensland. There were no shipments of oats during the corresponding month last year.

Modern Building Laws.

At the regular fall meeting of the Association of Engineers of Virginia, held in Roanoke on October 27 and 28 and November 1, the main topic under discussion was that of "Municipal Building Laws." A special committee appointed at the summer meeting to frame a set of building laws for the city of Roanoke made their report, and the subject was thoroughly discussed by those present. The report as adopted provides not only for the strength and stability of buildings and their safety against fire, but also provides for sanitary safety and makes rules for the proper enforcement of the laws. A committee was appointed to bring the matter before the city council and to try to have them added to the present building ordinances. While designed primarily for the city of Roanoke, these laws can readily be made applicable to any town or city.

The Hoosac Tunnel and the Berkshire Hills of Massachusetts.

Grand scenery is always an attraction in railroad travel. People traveling from the South or West to the great manufacturing districts of New England desire to catch a glimpse of the grand scenery of the Middle and Eastern States, and one of the first things to be considered is which line affords the best scenery. A little reflection will convince anyone that the celebrated Hoosac Tunnel Route, which is the short line from Chicago, St. Louis and the Southwest to Boston, is the best route to follow. No other line affords a tunnel ride, and to the traveler there can be nothing of more interest than the ride through this great tunnel, four and three-quarters miles long, illuminated in such a manner as to permit a view of the interior of this wonderful cavern extending through a mountain thousands of feet high. This great tunnel is ventilated by means of immense shafts running directly to the surface. The tunnel opens on the east side upon the beautiful Deerfield valley. It is the most charming landscape in all New England, and passengers are always delighted with it. After the ride through the tunnel the sudden burst into this panorama of nature is received with delight. The Hoosac Tunnel Route is one of the best managed in the country. Its passenger service is complete. Large and elegant buffet and parlor sleeping cars are run on all through trains. The passenger interests of the road are looked after by a competent corps of officials, and the splendid service offered is due in a great degree to their watchfulness and suggestions.

Hunters' Rates—Dates of Sale and Limits.

The Cincinnati, Hamilton & Dayton Railroad will make hunters' rates as usual. To upper Michigan, Wisconsin and Minnesota tickets will be on sale September 20 to November 15, 1893, inclusive, with final return limit November 30.

To lower Michigan (Mackinaw City and south) November 1 to 25, inclusive; final return limit November 30, 1893.

To Missouri from September 20; return limit thirty days from date of sale, but not later than March 1, 1894.

To Mississippi from September 20; return limit thirty days from date of sale, but not later than April 30, 1894.

To Arkansas from September 20; return limit thirty days from date of sale, but not later than May 1, 1894.

Winter Tourist Rates—Queen & Crescent Route.

Round-trip tickets to Lookout Mountain, Tenn., Florida and Georgia points, Asheville, N. C., New Orleans, La., Mexico City, Havana, etc., will be placed on sale by the Queen & Crescent route on and after November 1 at greatly reduced rates. The Queen & Crescent is noted as running solid vestibuled trains to Florida and New Orleans. Direct line to Southern tourist resorts. Finest trains in the South. Ask your agent for tickets over the Queen & Crescent; he will quote you rates, or you can address W. C. Rinearson, general passenger agent, Cincinnati, Ohio.

A New Through Sleeping-Car Line from Chicago to Seattle.

Via the Chicago, Milwaukee & St. Paul and Great Northern Railways has been established, and first-class sleeping cars will hereafter run daily from Chicago at 10.30 P. M., arriving at Seattle 11.30 P. M., fourth day. This is undoubtedly the best route to reach the north Pacific coast.

For time-tables, maps and other information apply to the nearest ticket agent or address Geo. H. Heafford, general passenger agent Chicago, Milwaukee & St. Paul Railway, Chicago, Ill.

Queen & Crescent Magazine.

The Queen & Crescent route is preparing to issue an elaborate publication in magazine form descriptive of the different sections of the South tributary to its lines.

Capitalists, tourists and business men are not likely to forget the Southern cities so long as the Queen & Crescent route can reach them with this artistic publication.

Copy of this magazine will be mailed to any address on receipt of ten cents in postage stamps. Address W. C. Rinearson, general passenger agent, Cincinnati, Ohio.

Saxby's Query to Ingersoll.

This beautiful song, words and music (regular sheet music size), will be mailed to anyone enclosing five cents in stamps to D. G. Edwards, general passenger agent Cincinnati, Hamilton & Dayton Railroad, Cincinnati, Ohio.

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